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TECH TIPS

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LAND ROVER

LRM

MONTHLY

SERIES I

Totally original fire
engine conversion



HOW TO MAKE YOUR DEFENDER LAST FOR EVER



LRM April 2015 £4.40



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04 >



TOP OF THE RANGE

Why Range Rover Sport is the
forecourt favourite this month



DARIEN GAP EXCLUSIVE!

We talk to expedition leader
Colonel Blashford-Snell

ACHSV

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Welcome

April 2015



ETERNAL DEFENDER!

We all want our Land Rovers to last for ever. In the case of Defender it can. We show you how

With the huge fuss Land Rover is making about the Defender, you can't help wondering why they ever considered dropping it. After all, it's what the company is all about. Yes, I know they like to tell us that the Range Rover Evoque is their best-seller and that the Discovery Sport is likely to do even better than that. But that's not what people associate Land Rovers with. Ask a small child to draw a Land Rover and they will draw a box-shaped car that looks very much like a Defender or Series model. It won't look like a Range Rover, Discovery, Freelander, or anything else off Gerry McGovern's drawing board.

It will be interesting to see what the model that eventually replaces Defender will look like. In the meantime, whatever Land Rover decides to do with Defender, you can rest assured that *LRM* won't be giving up on the finest off-roader ever made. We're determined that the Defender as we know it lives for ever – so we're showing you how to do just that. Turn to page 44 for the best advice ever for Defender owners.

“Ask a small child to draw a Land Rover and they will draw a box-shaped car that looks like a Defender”

Here at *LRM* we appreciate the amazing new models produced by Solihull, but we'll never forget the past. We love older Land Rovers because they are uncomplicated and easy to understand. To help you do just that, this month our experts have compiled special features on the legendary Rover V8 engine (page 172) and Series gearboxes (page 184).

History is important. Just as modern Britain was built on the foundations of Magna Carta and Trafalgar, Land Rover sits squarely on its proud heritage. In every Range Rover Evoque lives the spirit of Series Land Rovers and the Darien Gap Range Rovers (page 56). Happy Land Rovering!

Dave

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Technical queries

Pick the brains of *LRM*'s technical experts.

Letters to the Editor

Tell us what you think about *LRM* and the world in general.

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FREE GIFT



PATRICK CRUYWAGEN
Braves freezing temperatures to camp on the Yorkshire Moors



RICHARD HALL
Tells you everything you need to know about Series transmissions



ED EVANS
Our Technical Editor argues that Land Rovers benefit from constant use

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Avid collector cherry picks another One Ton

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HOW TO MAKE YOUR DEFENDER LAST FOREVER

44



PROJECTS • REPAIRS • MODIFICATION • ADVICE

REVIEW YOUR ROVER V8 ENGINE
Continuity with your V8 engine is essential for its health and performance. Here's how to keep it in top condition.

The Rover V8 is a 2.5-litre, 24-valve, aluminium alloy engine. It's a proven performer, but it's not invincible. Like all engines, it needs regular maintenance to keep it running smoothly. This includes oil changes, filter replacements, and timing belt checks. The V8 is a complex engine, and it's important to follow the manufacturer's recommendations for service intervals. Regular maintenance can help you avoid expensive repairs and keep your engine running for years to come.

BRITPART 172
The British Parts Pack

1 Check the oil level regularly. The oil level should be checked every 1,000 miles or every 6 months, whichever comes first. Use the correct grade of oil for your engine.

2 Check the timing belt. The timing belt should be replaced every 60,000 miles or every 6 years, whichever comes first. A failed timing belt can cause serious engine damage.

3 Check the water pump. The water pump should be replaced every 60,000 miles or every 6 years, whichever comes first. A failed water pump can cause the engine to overheat.

4 Check the spark plugs. The spark plugs should be replaced every 30,000 miles or every 3 years, whichever comes first. Worn spark plugs can cause the engine to misfire.

5 Check the air filter. The air filter should be replaced every 10,000 miles or every 12 months, whichever comes first. A dirty air filter can reduce engine performance.

6 Check the oil filter. The oil filter should be replaced every 10,000 miles or every 12 months, whichever comes first. A dirty oil filter can reduce engine performance.

7 Check the coolant level. The coolant level should be checked every 1,000 miles or every 6 months, whichever comes first. Low coolant can cause the engine to overheat.

8 Check the brake fluid level. The brake fluid level should be checked every 1,000 miles or every 6 months, whichever comes first. Low brake fluid can cause the brakes to fail.

9 Check the power steering fluid level. The power steering fluid level should be checked every 1,000 miles or every 6 months, whichever comes first. Low power steering fluid can cause the steering to be difficult.

10 Check the battery. The battery should be tested every 1,000 miles or every 6 months, whichever comes first. A weak battery can cause the engine to start.

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The essential workshop tools that we all call mole grips are tested by James Stanbury

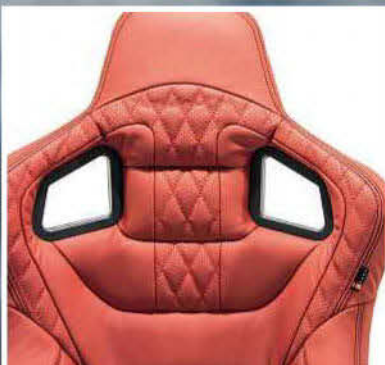
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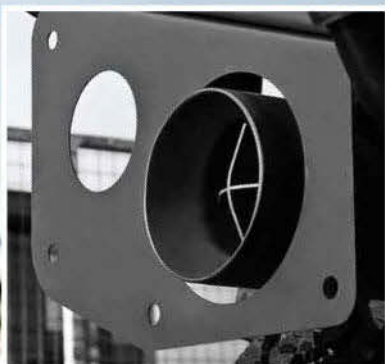


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UPFRONT

All the latest Land Rover news from around the world



BIKE SENSE

LAND ROVERS of the future will be equipped with new technologies that use lights, sounds and touch inside the car to prevent accidents involving bicycles and motor bikes.

Sensors will detect when another road user is approaching and identify it as bicycle or motor bike. Bike Sense will then make the driver aware, using lights and sounds.

The car's audio system will make it sound as if a bicycle bell or motor bike horn is coming through the speaker nearest the bike.

If it is overtaking or coming past the vehicle on the inside, the top of the car seat will extend to 'tap' the driver on the left or right shoulder so that he or she will instinctively look over that shoulder to identify the potential hazard.

LED lights around the car will glow amber and then red as the bike approaches. If the driver ignores the warnings, Bike Sense will make the accelerator pedal vibrate or feel stiff.

Bike Sense is currently being developed at Jaguar Land Rover's Advanced Technology Centre.

"It reduces the risk of accidents by increasing the speed of response and ensuring the correct action is taken," said Dr Wolfgang Eppe, JLR's director of research and technology.



BOND CARS REVEALED

JAGUAR Land Rover has announced its line-up of vehicles set to feature in SPECTRE, the forthcoming 24th James Bond adventure. These will include the Range Rover Sport SVR and Defender Big Foot, as well as the Jaguar C-x75.

Scenes including the heavily-modified versions of Defender and Sport have already been filmed in Austria for the big budget movie.

The highly-capable Big Foots were constructed by Special Operations with huge 37-inch diameter off-road tyres to tackle the extreme terrain. They also feature bespoke suspension systems and enhanced body protection.

Jaguar and Land Rover vehicles have been involved in a succession of Bond films – most recently in 2012, when a Defender 110 Double Cab was driven by Moneypenny in the opening sequence to SKYFALL.



LETTERS
PAGE 16
All your views
on the Land
Rover scene



PRODUCTS
PAGE 24
What's new in
accessories, tools,
clothes and gifts

ADDITIONAL EDITIONS

TO MARK the final year of Defender production, Nene Overland has added two stunning limited editions to its Icon stable: the unique 48 Heritage edition 90 and 110 Keswick Green station wagons with satin silver door hinges, front bumper and windscreens brackets.

The smooth crossmember cover plate and NAS tow step is finished in Alpine White to match the roof. Boost alloy wheels are also finished in Keswick Green.

Best of all, it gets a new lattice wire series I grille with a pair of spotlights mounted behind, just like the original series model.

Interior features include Keswick Green dashboard and classic steering wheel. Melville and Moon sand canvas seat covers are added to all seats with matching centre cubby box, dash top pods and grab handle.

The 48 Heritage edition 90 is priced at £35,995, while the 110 7 seater is £39,995.

The Icon 67 Sport edition is based upon the XS 90 and 110 wagons, and celebrates 67 years of Land Rover production with a sporty emphasis.

There's a choice of two colour schemes: Coris Grey and Barolo Black, with contrasting roofs.

Graduated privacy glass and the subtle



addition of black sill protection chequered plate and alloy treads finish off the look.

Inside, the dashboard receives the Icon retro body colour finish with contrast centre dash and black leather dash pods, grab handle and deep cushion cubby box. Priced at £39,995 for the 90 and £43,995 for the 110 67 Sport editions.

All editions get air con, ABS and TC. Edition enhancement packages also available.

There will be only 67 Sport and 48 Heritage editions produced. More information from Nene Overland at Peterborough (01733 380687) and Maidenhead (01628 671250) or check out www.defendericon.com

NEWS BITES

STOLEN RANGE ROVERS FOUND IN CONTAINER

TRACKER, the stolen vehicle recovery provider, helped locate four stolen Range Rovers at the Port of Tilbury, where police opened a 40ft shipping container to find them squeezed inside.

Thanks to the hidden Tracker device on one of the vehicles, the whole stash of stolen vehicles, valued in excess of £250,000, was recovered, before they could be shipped off somewhere overseas.

Adrian Davenport, police liaison manager for Tracker, said: "Official figures show 53 per cent of stolen vehicles are never recovered and this case shows us why, as criminals hide the vehicles and ship them."

Tracker stolen vehicle recovery systems work like an electronic homing device, using a covert transmitter hidden in one of several dozen places around the vehicle.

According to police, criminal gangs are now using less familiar ports, such as Grangemouth, in Scotland, Immingham or Killingholme, in East Yorkshire, to ship high-value vehicles out of the country without being them being detected.

SEALEY SPRING

TOOL specialist Sealey's annual spring promotion kicked off on March 1. There are bargains galore in the 72-page catalogue. Copies are available from your local stockist or online at www.sealey.co.uk, where you can also download an app for your smart phone or tablet.



LED EVOQUE

RANGE ROVER Evoque will be the first Land Rover to feature full LED adaptive headlamps when the 2016 model makes its debut at the Geneva Motor Show. The powerful technology provides superior illumination in dark conditions, following the curves of the road, and is identifiable by the distinctive headlamp shape.

The new Evoque will also include a new engine line-up and interior enhancements.

"The design refreshments give it an even greater presence on the road yet retain the emotional appeal that has made it so popular with more than 400,000 consumers around the world," said Gerry McGovern, Land Rover Design Director and Chief Creative Officer.



KAHN DESIGN has launched its latest take on the Range Rover Sport: the 3.0 SDV6 Diesel HSE 400 LE Luxury Edition.

It features replacement front and rear bumpers in carbon composite, redesigned RS front grille featuring a 3D mesh and a twin single exit crosshair exhaust system in polished aluminium.

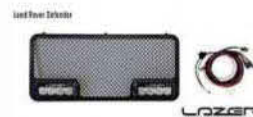
600LE 23in wheels in Dark Liquid Silver, brake callipers finished in liquid red, body-coloured side sills and vent surrounds, matt black bonnet vent mesh and Kahn lettering on the bonnet and tailgate complete the exterior styling package on the vehicle.

Inside, the 400LE has been fitted with front and rear seats in soft black quilted and perforated leather, along with door entry sill plates and matching vented foot pedals in machined aluminium.

The 400LE is currently available for £82,875.00. Go to: www.kahndesign.com



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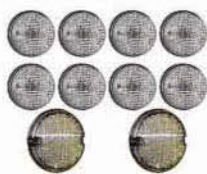
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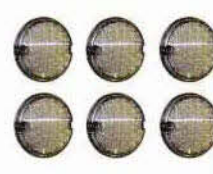
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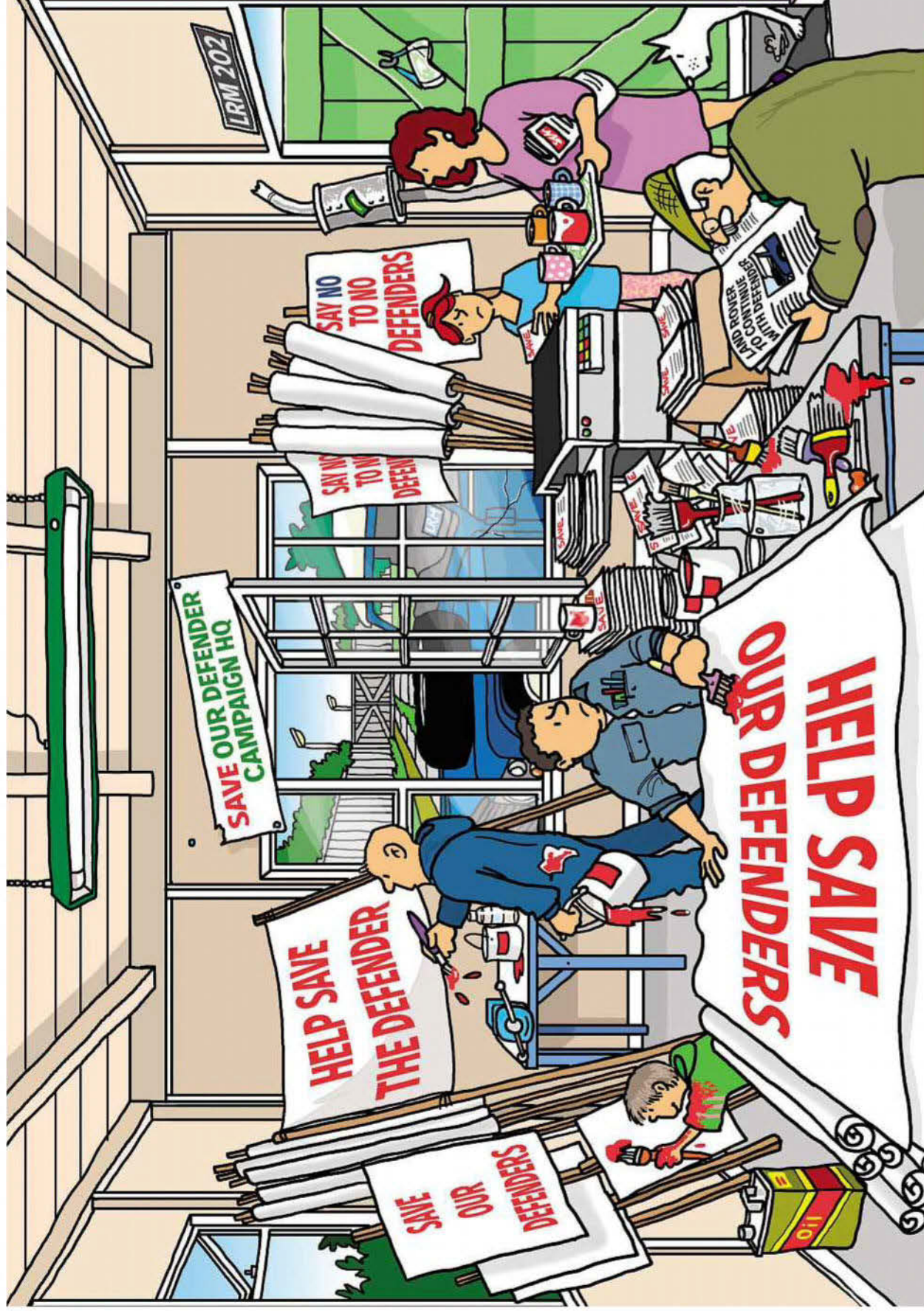
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Ian West Cartoon

UPFRONT



"I don't suppose any of you lot have seen the news?"

(Land Rover confirms Defender production will continue overseas after 2015 - LRM, March)



IAN WEST

... has been driving Land Rovers for over 40 years and drawing cartoons for *LRM* since issue 2. He lives in Epping Green, Essex

Readers' Letters

UPFRONT



HAVE I FOUND THE CENTRE STEER?

OVER THE YEARS I have read many stories in *LRM* about the fabled Centre Steer Land Rover. This got me thinking about an experience my wife and I had, back in the winter of 2003-04...

We were on our fourth visit to Oz. Each visit to Oz was between four and five months, so we kept a Holden Jackaroo 2.6 petrol 4x4 at our son's place in Queensland. After a few weeks with our son and his family, we always took off exploring different parts of Australia, usually lasting about

eight weeks or so.

This time we headed south, passing through small country townships, visiting Lightning Ridge and heading south using the Castlereagh and Newell Highways (mostly dirt) via West Wyalong and heading for Echuca to cross the Murray River into Victoria, and via Bendigo to Ballarat. This was to visit Sovereign Hill, the 1870's re-enactment mining town.

When we left there we headed west to the Grampians, and Hall's Gap. After this, we were

heading to Adelaide, using the Western Highway.

It was while in this area, we stopped at a farm/fuel station and saw a Land Rover mounted on a pole about 75 feet off the ground.

The story on the plaque at the bottom was that it had been used to mark out bush land into agricultural land, in the late 1940s/early 50s. The Centre Steer would have been ideal for this!

Could this be the whereabouts of the famous

Centre Steer?

Maybe an Australian Land Rover club could send an expedition to the area to check that the Landy is still there?

Brian George
(via email)

Well, maybe it's worth a long shot, Brian. This is the first time we've received reports of the Centre Steer in Australia, although it has been rumoured to be secreted somewhere on the island of Gozo, off Malta -Ed.

O-60 IN 22 YEARS

FIRSTLY, when I was a child I thought of childish things. In my mind a daft thing to say, but I used to think a lot about 0-60mph times.

Then I bought and rebuilt my Series III on a new chassis, so 0-60 was a long way from my thoughts. Tinnitus was a much bigger issue.

Anyway, the cover of *LRM* 201 displays a 0-60 time. I live in Surrey so I see far too much of this kind of silliness, and that's why my new hero is Roger Hicks. He needs to be our next Prime Minister.

Secondly, I harbour a secret desire to buy a winch. I have never had one, I wouldn't know what to do with it and even if I did I would probably never need it. Do I need to see a doctor or will this urge just fade away?

Thirdly, keep up the good work. I'm looking forward to this evening when I will sit down and read the latest issue. And perhaps have a dram of Laphroaig. The two seem to go well together.

Mark Gough

Little Bookham, Surrey

It wasn't until 1970 that Land Rover produced a vehicle that could attain 60mph with ease: the original Range Rover. I make that 0-60 in 22 years - Ed.

A STEP BACKWARDS?

IN THE FEBRUARY issue of *LRM* (Renewing Power Steering Box, pages 182-186) I was concerned that the steering drop-arm used in this article is a non-genuine article and is a backward step in safety.

Back in the design stages of Range Rover, in the 1960s, a conscious decision was taken that ball joints would not, in future, be used in the 'pendant' situation - ie, where the socket, when worn, could drop off the ball.

This decision was partly due to an experience I had with a prototype Land Rover, where a ball joint separated, and I was left with one-wheel steering. If the ball joint on Alisdair's Range Rover separates, he will have no steering control at all!

I would never, ever, allow the use of the "flatter arm", shown in photos 12 and 19, on my vehicle.

POSTSCRIPT: I have spoken to my friend Phil Bashall of Dunsfold DLR who has advised me that some late-model Range Rovers, including air suspension

Classics (and possibly others), do indeed have a flat steering arm with a pendant ball joint.

I am staggered at this change of company policy - a step backwards in safety to achieve a step forward in ride comfort, which allows drivers to put more strain on suspension and steering components!

Please accept my apologies for any suggestion that Alisdair or *LRM* had made a mistake. But I would recommend that strict checks be carried out on his pendant ball joint in future years.

Geof Miller
Stratford-Upon-Avon

Geof Miller was development engineer on the original Range Rover in the late 1960s (and a living legend to Land Rover enthusiasts), so you sit up and take notice when he makes a pronouncement on engineering matters on the vehicle he helped to develop. We suggest that anyone who owns one of the Range Rovers so affected would be advised to follow Geof's advice - Ed.

STAY SANE: RESTORE A LAND ROVER

I AM A Vietnam veteran as well as a veteran of the Rhodesian Army (1976-78) and the South African Paras (1981-84). I met and served with a few English ex-servicemen while soldiering for six years in Africa – a great bunch of men.

As an ex-soldier of three wars, the only thing that has kept me sane is the love of my 1963 Series IIA, which is also a Vietnam veteran. I'm told it served there from 1965 to 1968, although I have no papers yet to prove this.

Tell all ex-military veterans that they need a project to stay in focus – and an old Land Rover is just what they need. It worked for me.

I have just acquired a 1971 LWB. I'm not sure if I'm going to do this one up, as it's in good shape. Also, my old hands are starting to get a bit sore due to arthritis. I am now 64 years young.

Derek Andrews
Encounter Bay
South Australia

That's brilliant advice, Derek. Restoring a Land Rover is an absorbing and rewarding task – and you don't have to be an ex-serviceman to reap the benefits – Ed.

ANOTHER MEMBER OF THE 200 CLUB

IN THE 201st edition of *LRM*, in response to the letter from Philip Barry, you asked how many of us had read all 200 issues. Please count me in as one! I have been a Land Rover fan for many years, although not currently an owner.

I look forward to the next 200.
David Rayfield
Bristol



CLASSIC ECONOMY

WITH reference to Dave Phillips' "economy drive" article about Range Rover Classics (*LRM* winter 2015) I'll throw in my contribution:

My 1987 Vogue 3.5Efi auto is totally standard, including original-spec 205/80x16 tyres. Lightly laden, driven normally but with anticipation of road and traffic conditions (I'm an ex-HGV/PSV driver) on a 630-mile round trip, 80% of which was on motorways or dual carriageways cruising at the legal limit (where possible), with two overnight cold starts – 23mpg overall.

I hope this is of interest
Norman Denchfield

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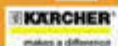
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To enter, send a postcard with your address and phone number to **LRM** with the page number on which Herbie appears. Send your entries to **LRM**, Find Herbie Competition, 5 Tower Court, Irchester Road, Wollaston, Wellingborough, Northants, NN29 7PJ or you can email editorial@lrm.co.uk. Competition closes on April 21. The first correct entry drawn will win.



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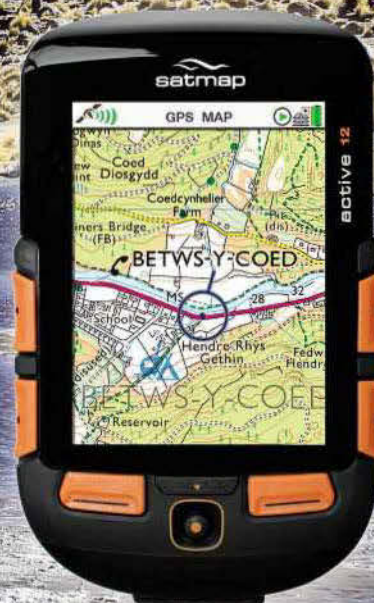
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Your Pictures

UPFRONT

Haley Foster cruising the Old Coast Road in the Lake District with his mate Kenny Morland



Richard Minskip in Germany's beautiful Mosel Valley vineyards. Just drink in that beautiful scenery and stop whining



After reading about ice driving in our Winter issue, Neil Smith, from Wigan, headed off to practise what we preach



Iain Tindall has just bought this Defender 110 double cab. here he is on the way home to Appin, on the west coast of Scotland



After wiping a bit of snow off his Defender's windscreen, Andrew James was able to drive while on holiday in the French Alps



Nathan Godwin couldn't resist taking a snap of his friend's Series II, which appears to be grinning in the snow



The best place to find snow
in Yorkshire has to be on
top of Rudland Rigg, as
Joss Moore found out



Michael Morton from Australia's Gold Coast
snapped this (subtle) bright yellow 101 in
his local shopping mall parking lot



Alan Tadd from northern Sweden uses his
Discovery 3 to tow a trailer packed with two
snow scooters. Note the rad muff



Feisal Jeizan enjoying the sunset with his
baby at Noro-Moru in Kenya. Why's he
holding on to the bumper. No brakes?



Jonathan Thompson is so happy with his
Defender 90, he decided to share a picture
of it with his fellow LRM readers



No info provided for this one, but we love
the distressed sky-blue finish. Must have
been used for one of Patrick's laning trips



After getting fed up with waiting for the
snow, Jo Pritchard decided to take out her
beloved Defender 90 (Daisy) in the frost

Products

UPFRONT



◀◀ SLIMLINE BOSS

PRICE: £72

With a depth of only 32mm, this is the slimmest boss available on the market. It's made from single billet aluminium and has been anodised in black. It's a 48 spline boss so it will fit 2015 models. Once installed the Momo horn button will no longer fit but TMD can supply a replacement centre, also anodised in black.

www.tmdtuning.com



▲ SS FRONT DOOR BOLTS

PRICE: £12

We hate the look of rusty bolts in the door hinges of a Defender. So why not just replace them with a set of stainless steel ones? These have been specially made and according to YRM Metal Solutions you cannot buy them anywhere else. Set includes a T40 bit because as you can see they have been countersunk. The kit pictured here is for the front doors only but they do have various other kits available.

www.yrm-metal-solutions.co.uk

SMART SEATS ▶▶

PRICE FROM: £299

These are the new reclining Defender bucket seats from BB Classics. They come with a set of free universal runners. The seat has a dual locking reclining mechanism for extra durability. Seats are not handed so you can swap them to prevent signs wear and tear. For special discount quote offer code LRM15, valid until the end of April.

www.bbclassics.co.uk



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▲ REAR DOOR ORGANISER

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The space behind a Defender rear door is a bit of a waste unless you install a Tuff-Trek Rear Door Organiser, which is made from heavy-duty ripstop, waxed canvas. It has seven fully zipped pockets and is available in grey or black. Designed for later Defender models including PUMA and late Td5s.

www.tuff-trek.com

TD5 ►► CLUTCH KIT

PRICE: £395.00

Sadly clutches do wear and eventually fail especially if not driven with mechanical sympathy or half a brain. This complete Td5 clutch kit will fit either a Defender or Discovery with that engine and consists of a plate, cover and flywheel.

www.britpart.com



◀◀ BATTERY CHARGER

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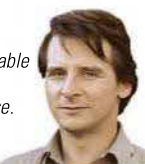
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Products

UPFRONT

▼ DEFENDER AIR INTAKE GRILLE

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▲ EARTH3 TENT ▲

PRICE: £99.99

Summer is fast approaching and with this in mind Outwell have just launched their lightweight Encounter collection, perfect for young families who just love the outdoors. The Earth3 tent weighs just 5.1kg and can sleep up to three people. We liked the detachable bathtub groundsheets which helps cut out draughts, water ingress and crawling insects.
www.outwell.com



▶ PLASTER PLEASE

PRICE: £45

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▶ HANDLING KIT

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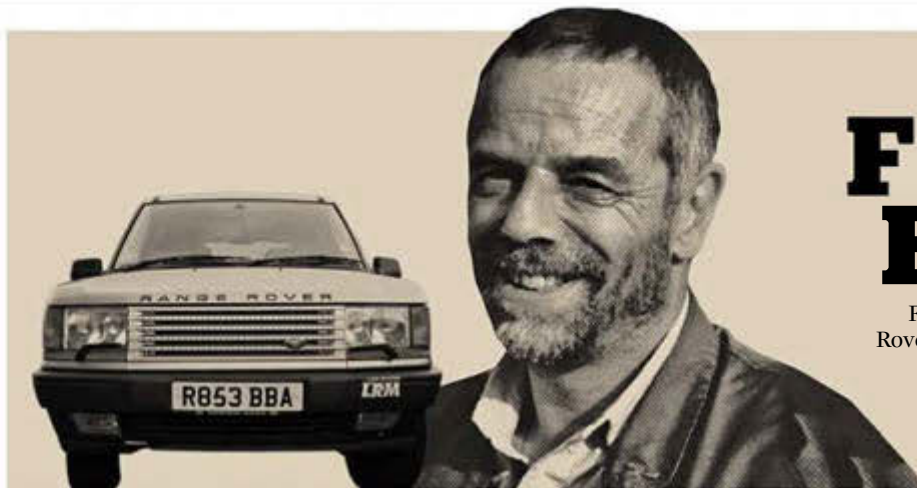
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FRANK ELSON

Frank has been involved with Land Rovers for more years than he cares to remember. These days he drives a P38 Range Rover.

Range Rover matters

Not so long ago a couple of photographs of a pranged Range Rover appeared on Facebook. On a narrow tarmac track, with no properly defined edges, the Rangie had lost a front corner – it was properly bashed in and the wheel was off. Almost immediately posts came in to the effect of “All the gear, no idea”; “Obviously driving too fast”; “What can you expect from the owner of such a vehicle?”... I’m sorry, but some of us just had to jump in.

There was absolutely no evidence as to how this accident had happened. No evidence as to speed, or if anything had distracted the driver – for goodness sake, we didn’t even know if he’d had a heart attack, stroke or brain tumour!

Yes, I went deliberately over the top there, but you see what I mean though. I couldn’t help wondering if the same people would have made the same sort of comments if the wrecked vehicle had been older and cheaper. Maybe if it had been a Classic, or an old Series III there would not have been so many outright nasty comments made.

Anyway, if you were the driver, or a passenger, in that vehicle and you read *LRM* I hope you and your vehicle are now all right.

Recently I called in, while passing, on an old friend, one of the nicest blokes I know, Roy Bickley, proprietor of RK Automotive. My beloved Marjorie and I got to know Roy and his wife Kim, many years ago when they were just starting out in business and used to have a stand at many of the Land Rover Shows.

Of course Roy’s business is 90 per cent Land Rovers, but in these economic times he doesn’t turn work away. How about a 1930s Packard and a Lancia Delta in the workshop! Like myself, Roy has a soft spot for Range Rovers. I suppose it’s a disease, but we’re not looking for a cure.

So we were drinking coffee and chatting when he mentioned something that I’ve not heard before. The BMW V8 engines fitted to the L322 Range Rover amongst others up to 2006 is no longer available to buy new. In fact, it has got so bad that he’s seen otherwise perfectly decent vehicles scrapped simply for lack of an engine.

The engines that are no longer available are the earlier L322 up to 2006 model year. And secondhand engines are no use because they suffered from the effects of Nikasil

lining failure (Google it). Happily, anything from 2006 onwards will have the much-improved Jaguar V8 which is stronger, more reliable, and easier to repair.

If you do Google “Nikasil” you will find that Jaguar had suffered from the same problem, but a few years before BMW, and sorted out the new (better!) engine before BMW did.

Some 2006s are run-out models, so just be careful if you are looking at one, it may still have the obsolete BMW lump. They are distinctive to look at – again, check Google images for the engines and you will see what I mean. After all, if you are travelling a long way to look at a motor you will want to be absolutely certain which engine you are looking at before setting off.

In my experience many car salesmen wouldn’t have the faintest idea what engine was in the car. Most of them only know the capacity because it’s in the logbook. So ask them to email you a picture.

When writing my column for the February issue of *LRM*

I had mislaid my notes on the Classic Car Show at the NEC so had to write it from memory. Yesterday I got a letter from my accountant with lots of stuff that included a notebook that David told me he had “found amongst your papers”.

Okay, so here goes with the bits I forgot last time...

The bloke with the lovely Ninety from Cyprus on the Ex-

Military Land Rover Club stand was Wayne Wood. It was in great condition except for some rust on the tailgate and we chatted about the pros and cons of replacement or repair, in order to keep a military vehicle “right”.

My viewpoint is that the Army would just have stuck a new tailgate on and splashed some paint on it. So no reason for Wayne not to do the same thing.

I also missed off a mention for Darren Carey and Ken Shaw who were manning a really nice stand for the Birmingham Land Rover Group... and for Range Rover Classic rebuilders, Atkinson Land Rovers, who have had loads of rubber bits and gaskets made up. Paul and his lovely wife Maggie showed me rear quarter window seals, lamp gasket seals and all sorts of things that are otherwise unobtainable these days. Call them on 0121 559 5255.

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DAVE PHILLIPS

Land Rover writer and enthusiast Dave has experienced all aspects of the Land Rover scene in every corner of the world

Blame Dad's Army

LPG (liquefied petroleum gas) is the greenest fuel you can put in your Land Rover and it is half the price of petrol. It's hugely popular in Europe and in Turkey 37 per cent of cars run on it. So how come so few of us in the UK fill our tanks with it?

I blame Dad's Army. I can even trace it back to the exact date. On September 11, 1969, the BBC screened *The Armoured Might of Lance Corporal Jones* and it revolved around Jones allowing his elderly butcher's van to be used as transport for the Home Guard platoon. With petrol on ration, the van was converted to run on gas, with a huge gas-filled balloon attached to the roof of the van. Needless to say, it was soon punctured by a stray bayonet.

As an impressionable child, I associated gas with that mishap – and that didn't change until the 1990s, when I first got involved with V8 petrol Land Rovers. My first, a 3.5 Range Rover, struggled to reach the teens when it came to mpg, so when I got a V8 Discovery 1 soon afterwards, I was eager to go down the LPG route.

The conversion was carried out by Nene Overland, near Peterborough, who also had an LPG pump on the site. It was just as well they did, because back then (1998) it was the nearest to my home – and I lived 17 miles away.

LPG did everything that was claimed of it. It was half the price of petrol at the time, at the cost of a slight dip in performance. On the downside, an 80-litre steel gas tank sat rather obtrusively in the boot. At least it was safer than Dad's Army's balloon.

But for me the biggest issue was availability of the fuel. In December 1998 I drove the Discovery to Ireland, where I ran it on petrol for the entire 250-mile trip, because I couldn't find an LPG supplier in the Emerald Isle.

Even back in the UK, where LPG conversions were all the rage, there was a dearth of suppliers. Finding a stockist on a long trip often meant going miles out of your way – often tucked away on an industrial estate, and usually closed at weekends.

Not long afterwards – just after the turn of the millenium, if I remember correctly – Shell decided that LPG was the fuel of the future and set about installing LPG pumps on

most of its forecourts. Sadly, though, the gas bubble had by then burst for Land Rover fans, probably because the supply of models most likely to be converted – big V8s and 2.25 Series petrols – had diminished and the secondhand market was now dominated by diesels.

It's a shame, because it is so easy to get hold of the stuff these days. I've just been on the autogas.co.uk website, typed in my postcode and was given an impressive list of LPG garages within a 50-mile radius. The nearest is less than five miles from my home.

If you run a petrol Land Rover, you can expect savings of about 40 per cent on your fuel bills once you've converted to LPG. For example, if you run a 2.0-litre petrol Range Rover Evoque and cover an average of 12,000 miles a year at 32.5mpg, you'll save £739 per annum on LPG.

Even if you run a V8 Range Rover on classic car insurance and cover just 4000 miles a year (at 18mpg) you'll save £444.

As long as you're thinking about keeping your vehicle for a year or two, the cost of a professional conversion – from £1200 for a four-cylinder petrol; about £1800 upwards for a V8 – can soon be recouped.

“Half of motorists suffered damage to their cars in car parks last year”

■ They say that a sign of getting older is policemen appearing to get younger. I reckon a better yardstick is cars getting bigger. The cars of my youth are tiny compared to their modern counterparts. For example, today's

Mini Cooper is 24 per cent wider than the 1959 original. The VW Golf is 12 per cent wider than when it was first launched in 1974.

When it comes to Land Rovers, it's even worse. An 80-inch Series I is dwarfed by a modern Defender.

Unfortunately, while cars have got bigger, parking spaces have remained the same size. And that means trouble – especially for drivers of big vehicles like Land Rovers. A recent AA survey revealed that more than half of motorists have suffered damage to their cars in car parks in the last 12 months.

Some experts are now calling for minimum parking space dimensions to be accepted by all councils. It seems size really does matter – at last.



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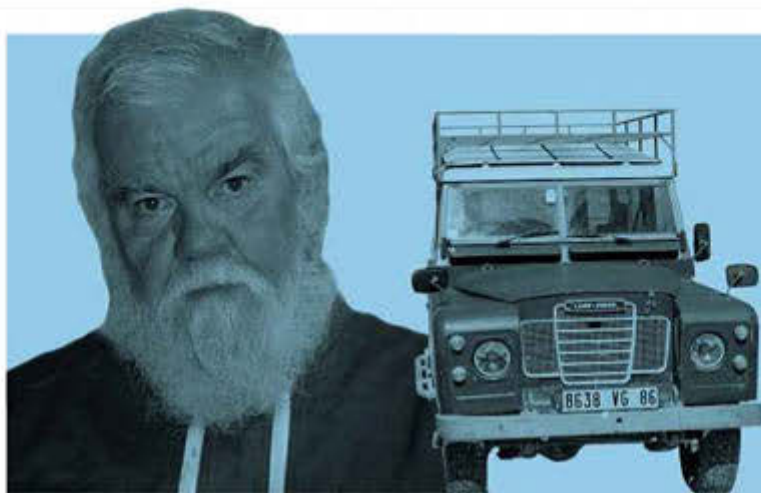
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ROGER HICKS

Bought a 1962 Series IIA in 1980. Now has a 1972 Series III bought in 2001. Has driven non-Series Land Rovers and even Range Rovers (but doesn't really trust them)

Life in the slow lane

All Series Land Rovers are slow, except Series Is, which are very slow. We all know this. Except that they aren't, really. It's all a matter of perspective. As recently as 100 years ago, very few people had ever travelled at a mile a minute. If they had, it would almost certainly have been by rail. Half a century or so before that, passengers on the new-fangled railway had to contend with weighty advice from people like Dionysius Lardner, who warned that they would asphyxiate from lack of air at such speeds, or Martin van Buren who in 1865 called 15mph a "breakneck" speed. Google both names; they were respectable members of society, not members of the tinfoil hat brigade.

In other words, speed is a recent invention. So let's try a little thought experiment. Imagine a 12mph speed limit. Not very attractive, is it? But now imagine that instead of 12mph being imposed tomorrow, it had been imposed 120 years ago, and never rescinded. In other words, no-one driving today would ever have known anything else.

Why 12mph? Because it's often quoted as the average speed of road traffic in London; London is quite a big place; and Londoners get around OK. It therefore makes a fair starting point. Of course we don't all live in London. I live in a small village deep in the countryside, and I get angry with people who tell me that I should use public transport. There isn't any. But there was. In the early 20th century, railways with frequent services linked many of the local villages. If you couldn't walk to the nearest station in a quarter of an hour or less (and usually you could) then even at 12mph it wouldn't be a long drive. And the railways wouldn't be subject to speed limits.

Bear in mind, too, that railways are not the only thing that would have developed in a different way in my parallel world. There would be much more scope for local shops: places we could walk to, or cycle to, or drive to in a few minutes, even at 12 mph. When I arrived, a dozen years ago, there was a butcher in my village. Now he's closed and the nearest is in the next village. More shops means more jobs; more localism; more of a sense of community; less

need to rush around. Fruit and vegetables can still come up from Spain, but by train and (from the station) via 12mph lorries, instead of in huge trucks thundering up and down motorways for two or three days each way.

Fuel consumption plummets, and with it, pollution. So do accidents and the risks attendant upon accidents. Most people, be they drivers, pedestrians or cyclists, can plan ahead a lot better if a vehicle is travelling at 12mph or less rather than 30mph or more. If they do get it wrong, injuries and mechanical damage are likely to be a lot less serious. At low speeds, vehicles and roads last far longer, too.

Journeys take longer, it's true, but how much of a drawback is this? Too many of us are busy fools, running faster and faster and working harder and harder just to buy more stuff? It's the famous WH Davies line: "What is this life if, full of care, We have no time to stand and stare?"

There would have to be exceptions, of course. Police cars, for example, would need to be able to catch fast bicycles and galloping horses. A maximum of 40mph should be plenty, though such speeds would seldom be needed. Bicycles are quite flimsy, and riders tire, so it would be hard to sustain maximum speed for long even if you didn't hit anything. Horses have more endurance but are hard to steer, especially through traffic. With either, 15mph might well be a "breakneck" speed if you fell off. Nor can you have your getaway

bicycle (or horse) outside with the engine running and your driver ready to drop the clutch as soon as you throw the swag and yourself into the back seat. Probably the same speed limits would be adequate for ambulances. Local hospitals would remove the need for 100mph dashes on the motorway, and besides, there would always be the railways. If it's really urgent, use a helicopter.

Of course it's all a fantasy. It's like the story of the man asking the way and being told, "You can't get there from here. You've got to start somewhere else." We'd need to start from about 1890. But next time you're thinking how slow your Series is, stop and think about how, from the perspective of most of humanity for most of history, it is terrifyingly and arguably unnecessarily fast.

"All Series Land Rovers are slow, apart from Series Is, which are very slow"

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DEFENDER 90

WHEN NOISE ANNOYS...

After the Series III gearbox shenanigans last month I rather hoped for a few nice easy jobs to get me back into the normal routine after the Christmas break. A very tidy Ninety seemed like a good place to start. I had fitted a 200Tdi engine a couple of months previously, and the vehicle had now come back with a short list of seemingly minor faults to investigate. The clutch pedal had gone a bit soft, there was a slight 'clonk' from somewhere in the drivetrain when taking up drive, and the owner wanted me to investigate an annoying buzzing / rattling sound under load.

The clutch problem was easy enough to diagnose: the master cylinder was on the way out, with a small amount of fluid trickling down the pedal. I ordered a new cylinder, along with a slave cylinder and flexible hose as they looked rather elderly. Transmission backlash next: the propshafts and halfshafts were all in good order as were the suspension bushes and 'A' frame balljoint. That just left one thing left to check: I pulled the backplate off the transfer box to have a look at the splines on the back of the gearbox mainshaft. This is a known weak spot on the LT77 gearbox: the splines were lubricated at the factory with grease which hardens with age and turns into a rather effective grinding paste.

With the transfer gear removed I could see the problem straight away: the mainshaft splines had worn to about a third of their original width, and the splines on the transfer gear were worse. From about 1994 Land Rover cross-drilled the transfer gear to provide additional lubrication which rectified the problem: it is a pity it took them eleven years to come up with the idea. If the mainshaft splines had only been slightly worn we would probably have got away with a new transfer gear and plenty of fresh grease, but this particular gearbox was well past that stage, so I ordered a reconditioned 'box and new transfer gear. There are several different variants of this gear, depending on the age and specification of the transfer box: I found the serial number on this one under a thick layer of encrusted dirt, revealing it to be an early Suffix B unit.

So with the new gearbox fitted and all the clutch hydraulics replaced, all that remained was to track down the rattling noise. It sounded very much like something vibrating against a body panel. The problem was that it only happened in third gear or higher, and within a very narrow band of engine load and speed. I could not reproduce the noise with the vehicle stationary: all I could do was to find

and fix a possible cause of the rattle and then take the vehicle for a quick spin around the estate, feeding in the power gently with my right foot while lightly braking with my left. The noise sounded as though it might be coming from somewhere below and in front of me, although the location was impossible to pinpoint. Here are a few of the things I found:

- Front wing stay bolts missing
- Chequered plate wing tops inadequately secured
- Heater cable rattling against inner face of bulkhead
- Brake pipe rattling against outer face
- Bonnet hinge inserts worn
- Bonnet stay worn and loose at the hinge point
- Nearside inner wing rattling against air filter mount
- Two missing bolts from the offside outer wing skin
- Fuel tank incorrectly mounted and lightly contacting chassis
- Front brake dust guards rattling on their mountings.



And much, much more. It is amazing how many different potential sources of rattling noises you can find on a thirty year old Land Rover once you start to look. But none of the problems I fixed actually made any difference.

On about the 20th road test, just as I was getting the vehicle up to the speed where the rattle started, one of the front wheels hit a small pothole and just for a moment I heard the rattle. Suspension? Back to the workshop for another look. The vehicle had recently been fitted (not by me) with new front shock absorbers and turrets. Everything appeared to be in order, but I set about tapping various components with a small hammer and found that when I tapped the offside front spring I got exactly the same noise that I could hear inside the vehicle. Close inspection revealed the cause.

The turret securing rings had been replaced at the same time as the turrets.

Original specification rings are corrugated, providing a flat seat for the springs. These cheap replacements consisted of a simple flat steel ring with four mushroom-headed studs welded on. The spring was resting on the rounded end of two of the studs and in very light contact with the third. Under a very specific set of conditions the engine created a resonance which was being transmitted through the drivetrain and front axle, causing the top of the spring to "chatter" against the turret ring. So a simple fix in the end – new Genuine Parts turret rings banished the rattling noise for good – but nearly a day's work to get to that point.

EX-MILITARY

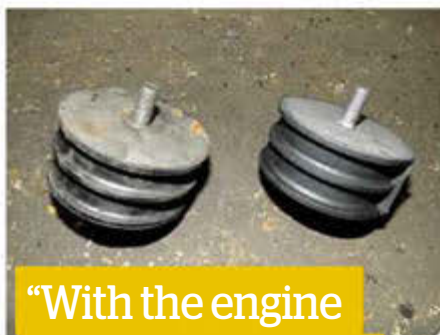
RATTLE CURE

By strange coincidence the very next job also involved a rattling Land Rover. The vehicle was a very late non-turbo Defender 110 direct from Army service, and it wasn't just one component which rattled, it seemed to be every single item on the vehicle. With the engine running, the whole Land Rover was shaking itself to pieces. The owner had already budgeted for an engine replacement: although the lump under the bonnet was a very clean, oil-tight reconditioned MoD engine, I have found that some of these are rather better than others. A couple of years ago I had to remove the sump from a recently overhauled, low mileage ex-military engine and found half a dozen random M8 bolts lying in the bottom.

But before condemning the engine, I thought I would investigate a bit further, since it fired up easily and ran cleanly and evenly on all four cylinders with very little smoke. I noticed that the engine mounting rubbers were brand new, and crawling underneath I found that the gearbox rubbers had been recently replaced as well. Good quality mounts will yield slightly when squeezed between finger and thumb: cheap ones feel as though they have been cast in concrete. Guess which kind this vehicle had?

Changing engine and gearbox mounting rubbers on one of these vehicles is not a hard job. The engine needs to be lifted and pulled sideways to extract the offside front mount, and the gearbox brackets have to be unbolted from the chassis to do the gearbox rubbers.

But I soon had a new set of decent quality mounts installed. Time to fire the engine up. It quickly settled to a nice smooth idle. No rattles, no buzzes. Amazing that four rubber mounts can make such a difference.



“With the engine running the Land Rover was shaking itself to pieces”

Just as an aside, this particular vehicle was a rather interesting beast, with a 'MA' date code in the VIN number indicating a build date around 1995, which was just before Land Rover switched to building the 'Wolf' Defender for the British Army. The vehicle had disc brakes all round, a short-bellhousing R380 gearbox, 300Tdi-style wiring loom with chunky plastic connectors, and quite a few other fittings which I have not seen before on a pre-Wolf Army One Ten. I would guess it was from one of the very last batches made – if not *the* last.

I am always fascinated by very early and very late examples of particular Land Rover models, when the factory was busy trying to use up stocks of bits from the outgoing model, or adapting components from the incoming one to avoid ending up with unwanted stocks.

If you have a 1971 Series III with Series IIA style door hinges, don't assume they were fitted by a previous owner. The vehicle probably left the factory like that.



A WELL-used early Series III turned up for service and MoT last week. One of the jobs was to investigate why the headlight fuse kept blowing. Series IIIs only have four fuses, and none of them are in the headlight circuit. But on this particular vehicle, one of the four fuses under the steering column had been connected into the lighting circuit, and it was getting very, very hot – certainly enough to melt one corner of the fuse box cover. Eventually the fuse would fail, and since it was in the master lighting feed it would take not only the headlights with it, but side and tail lights as well. Not ideal in the dark, especially on a vehicle with no hazard flashers...

The contacts on that particular fuse were quite blackened and weakened by heat, so I swapped the fuse box for one left over from a Series III I stripped for spares a while ago. The new fuse box again got hot, at exactly the same point. It seemed to be building up heat at the connection between the fusebox and the wire to the headlight switch. I replaced the spade terminal on the end of the wire which was looking a bit sorry for itself, but the problem persisted. I checked the current draw across the fuse contacts with a multimeter and got a reading of around ten amps for side and headlights together which is near enough right, given that the old multimeter I use for this kind of work isn't the most accurate instrument in the world.

So the only conclusion I could reach was that these old Lucas fuse boxes just aren't man enough to cope with a continuous ten amp current draw. The owner still liked the idea of fused headlights, so I ended up putting main and dip beams through two separate fuses under the bonnet, and restored the sidelight circuit to its original unfused state. Ideally I would have liked to run the sidelights through a fuse as well, but this would have meant delving around in the birds' nest of fragile forty year old wiring behind the dashboard. If you have a Series Land Rover on which all the electrics actually work, sometimes it is best to leave well alone.



RICHARDS HALL'S TRADE TIP: TRACK ROD ENDS SWAP

CHANGING track rod ends can be a horrible job as they are almost always rusted solidly into the tube. I usually manage to shift them by removing the track rod, loosening the clamps and sliding them up the tube, then resting the end of the tube on an anvil and belting it with a hammer to break the rust's grip on the threaded portion of the track rod end. Nine times out of ten the rod end will then unscrew from the tube with a bit of persuasion

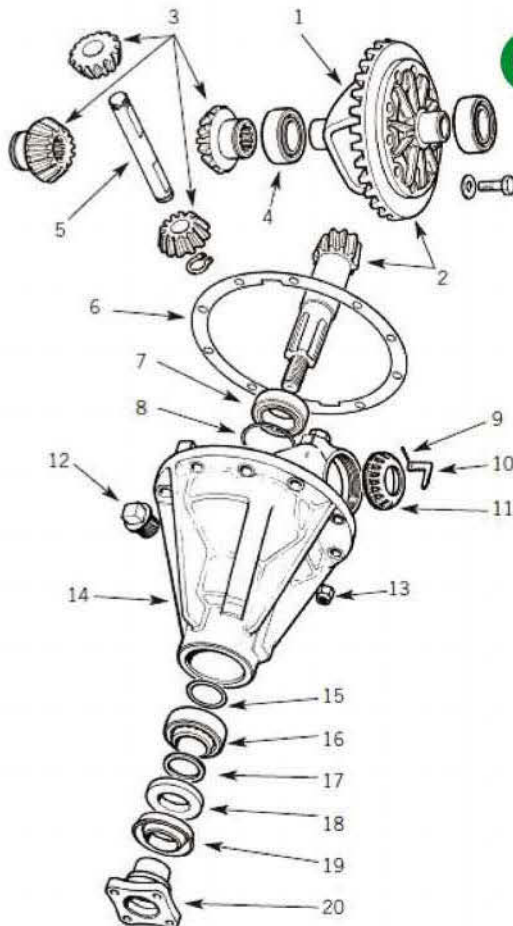
from a length of steel tube over the tapered end. Even if you only have to replace one rod end, you still need to free off both so that you can turn the track rod to adjust the tracking once the whole assembly is back on the vehicle. Clean out the slots in the end of the track rod, otherwise the clamp may not securely hold the rod end in the tube. Smother the threaded portion of the rod end in copper grease to make the job easier next time.



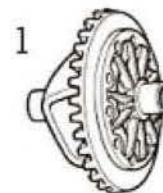
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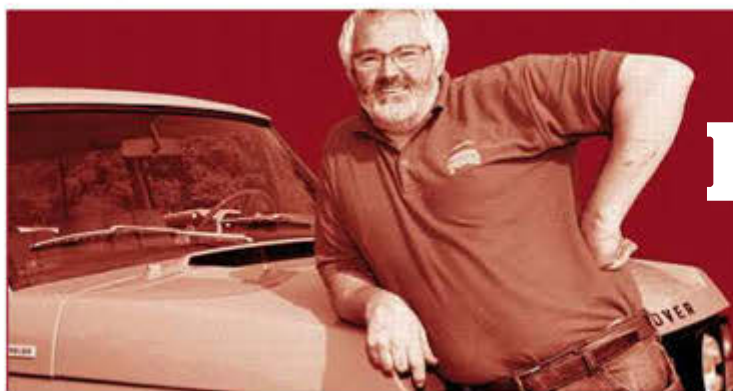
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Dunsfold Diaries

By Philip Bashall

HAND MADE BY ROBERTS

Philip Bashall explains how the Dunsfold Collection played a key role in creating the replica of a Series 1 production line at Solihull

Photographs: The Dunsfold Collection and Land Rover

IT WAS ONE OF the more surreal conversations I've had. Roger Crathorne and I were sitting in a G-WAC Discovery on Lake Geneva, discussing Roger's long-held ambition to mark the imminent end of Defender production by recreating the original Series 1 production line at Solihull. And when I say 'on Lake Geneva', I mean just that. We were floating in the amphibious G-WAC that had been built for the press launch in 1989, and which had been shipped out for the 2014 Geneva Motor Show to give visiting journalists and industry figures a bit of excitement on the lake in the Discovery's 25th anniversary year.

But I digress. You may already have read about the Series 1 display, which officially opened slap-bang in the middle of the Defender assembly hall this February. It will remain there until the end of Defender production later this year, and you can see it as part of a three-hour tour that costs £45. I think it's well worth it; I've been visiting the plant on-and-off since the 1970s and I never get bored of seeing how Land Rovers are put together in a manner that hasn't changed much since the first ones were built in 1948.

My unconventional meeting with Roger took place last March, but plans to recreate the production line were afoot well before that. The original idea came from Roger but the old bugger decided to retire – finally! – halfway through the project, at which point Michael Bishop from the Land Rover Driving Experience at Solihull took control. Michael is a huge Series enthusiast – he wrote the book *They Found Our Engineer* about tracking down Series 1 development engineer Arthur Goddard, who is still very much alive in Australia – and he deserves credit for doing a fantastic job.

My role, as representative of Dunsfold, was to assemble a selection of 'new' Series 1s as they might have appeared going down the line. They would represent three stages of the build progress: chassis with axles attached; rolling chassis with engine and gearbox installed; and an almost complete vehicle with most of its bodywork fitted. One of the restored Series 1s from the Land Rover press fleet – 438 DEL – would depict a finished vehicle, while the Series One Club agreed to lend their sectioned example.

While this tableau of Series 1s nominally represents the start of production in 1948, it's actually more accurately dated to January 1949. Why not '48? Because spare parts for that period are incredibly difficult to find! Land Rover only built 3000 vehicles in '48. But accepting that compromise, I tried to use as many genuine 1949 components as I could lay my hands on. A Series 1 consists of about 8000 parts, and most of the smaller ones were



Clockwise from top:

Loading a 'new build' Series 1 for transport to Solihull; 1949-spec chassis from the Series One Club; fully refurbished engines

new-old-stock from the Dunsfold stores. We only resorted to reconditioned secondhand parts for the bigger items, like engine blocks or gearbox cases, which can no longer be found brand new.

We had a real ding-dong over the choice of tyres to use. I was adamant that we weren't going to use some modern casings made in the Czech Republic or wherever; problem was, you can no longer obtain Trakgrips – the moulds in Malaysia have now been destroyed – and it wouldn't be possible to get hold of enough Avon Traction Mileages in time. So we decided to go for modern reproductions of the old Bargrips, which were fitted to Australian-market vehicles. They're the same as used on WW2 Jeeps.

As with any large organisation, getting the paperwork signed off takes quite a while and so I made a leap of faith and commissioned some rear bodytubs from hot rod fabricator Geoff Cousins off my own bat in December 2013, which was the only time he could make them. Likewise, I ordered four new chassis – though only three were used in

Immediately below and bottom right:
Land Rover production in the mid- and early-50s respectively. Note the high proportion of left-hand-drive vehicles being built for export



“What was really heartening was how the Defender line workers rallied round”



the end – from the Series One Club well before the project had been officially given the green light. I was pretty sure it was going to happen, so I was willing to take the gamble and lay out my own money up front.

What was really heartening was how the workers on the Defender production line rallied round and contributed to the project. There's a real sense of camaraderie among these guys and they went the extra mile to help out. Not many people realise that my reproduction Series 1 bodies were painted on the Defender production line, thanks to the blokes in the Paint Shop. Steve Moray in the Tool Room also deserves a special mention for welding up the 'skids' on which the vehicles are moved along the line, plus the work benches, racking and anything else that was needed.

There were many, many more individual acts of generosity. Someone might say, "Old Fred has still got a 1950s coat locker in his garage", and in this way many authentic pieces were gathered together from former employees. Even a batch of factory asset plates – the metal tags attached to every item of equipment – was discovered and used to add a touch of authenticity. I was able to provide some of the old galvanised parts bins that I'd acquired when Land Rover switched to using plastic tubs; a real case of coals to Newcastle.

As for what will happen to the display when Defender production finishes later this year – well, I can't imagine that it won't be kept intact and moved to a museum. There's certainly no intention to sell off the vehicles as 'new' Series 1s, even if that were possible. But it would be worth visiting Solihull this year, just in case.

I'm sometimes asked what I think about the Defender coming to an end. This may surprise you, but my opinion is – bring it on! The Defender is a vehicle designed for another age. I have every confidence that whatever replaces it will be just as impressive. And for a well-upholstered person like myself, it will certainly be a lot more comfortable to drive.



Above centre, left and right:
A complete rolling chassis, correctly painted green, ready to leave Dunsfold for the recreated Series 1 production line at Solihull

Dunsfold Collection

THE DUNSFOLD COLLECTION is not open to the public but holds an Open Weekend every two years; the next one is on 13-14 June this year. You can become a Friend of the Collection for an annual subscription of £35. Visit www.dunsfoldcollection.co.uk to find out more.

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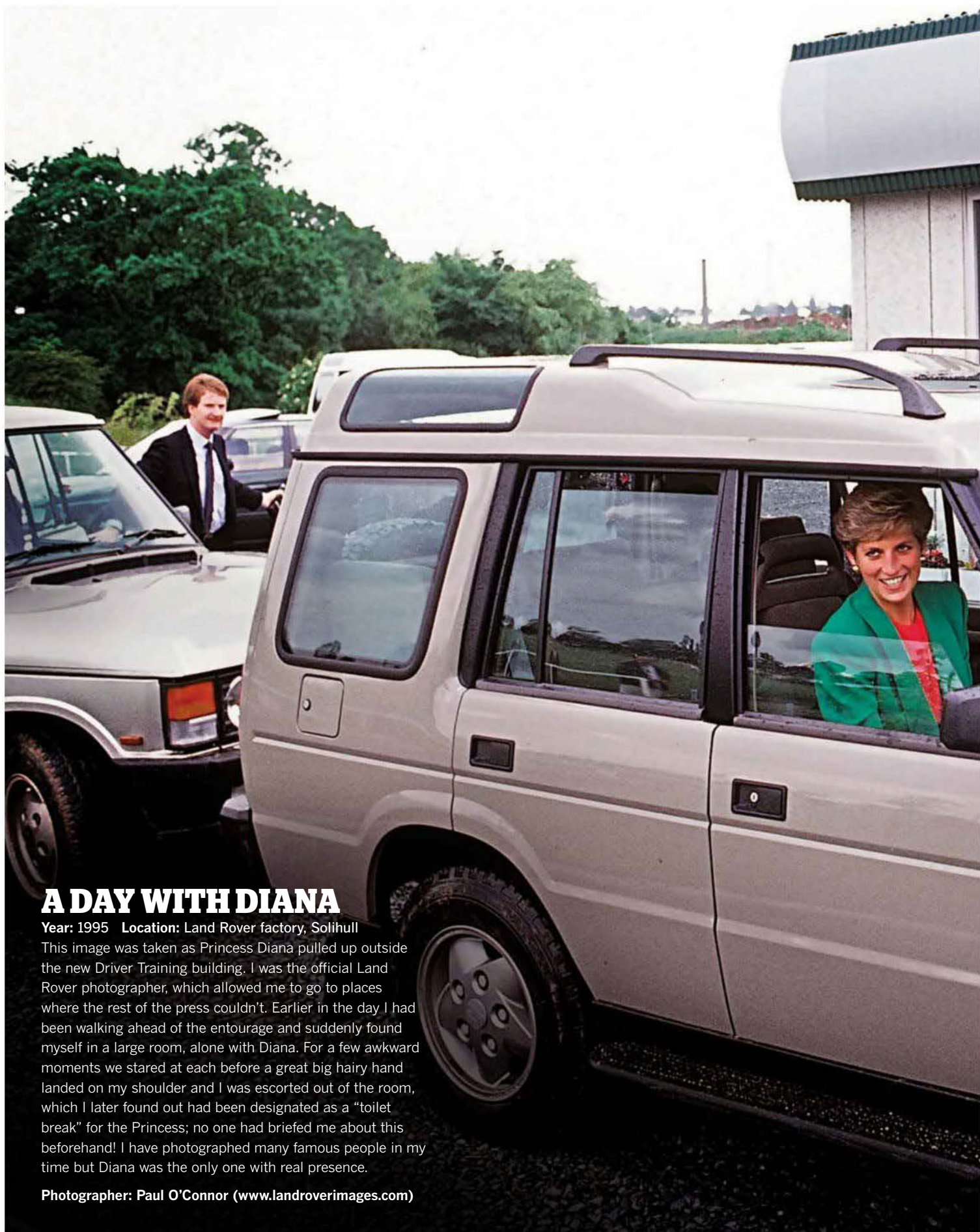
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The Big Picture

UPFRONT



A DAY WITH DIANA

Year: 1995 **Location:** Land Rover factory, Solihull

This image was taken as Princess Diana pulled up outside the new Driver Training building. I was the official Land Rover photographer, which allowed me to go to places where the rest of the press couldn't. Earlier in the day I had been walking ahead of the entourage and suddenly found myself in a large room, alone with Diana. For a few awkward moments we stared at each other before a great big hairy hand landed on my shoulder and I was escorted out of the room, which I later found out had been designated as a "toilet break" for the Princess; no one had briefed me about this beforehand! I have photographed many famous people in my time but Diana was the only one with real presence.

Photographer: Paul O'Connor (www.landroverimages.com)



HOW TO MAKE YOUR DEFENDER LAST FOR EVER



The legendary workhorse was built to last, but you can extend its lifespan by investing a little TLC





To Defender fans, there's something a bit macabre about Land Rover's current celebrations to mark the end of production for the Defender. For those of us who see our Land Rovers as family, that's like being told a loved one has 12 months to live – and getting out the party balloons.

But we do understand where Solihull is coming from. It's the end of an era and it needs to be properly marked. Only we don't see it as the end of anything. Here at LRM we reckon Defenders can live for ever – and this feature is all about showing you how.

It's often quoted that 75 per cent of all Land Rovers ever built are still on the road. That's an impressive figure – and impossible to prove or disprove – but it's based on misleading statistics. After all, the vast majority of all Land Rovers ever produced have come off the production line in recent years. But it's still a nice thought.

We all want our Land Rovers to last for ever. But is it a realistic proposition? We like to think so. We also enjoy any opportunity to put our money where our mouths are, which is why we all enjoy working on our own varied fleets of Land Rovers of assorted ages to avoid that one-way trip to the scrapyard.

The truth is that any Land Rover can last for ever. So can practically any man-made object. It's just a case of replacing or repairing the worn-out bits. Like Trigger's faithful broom in *Only Fools and Horses* (20 years old, with 17 new heads and 14 new handles).

With brooms it's easy. Just two parts, which are easy to obtain and simple to fix. It's when machines get complicated that it gets more difficult. Luckily, the Land Rover Defender is the most uncomplicated of modern vehicles. It consists of a sturdy frame of robust steel, to which its engine, transmission, running gear, steering, bodywork, seats and other bits and bobs are all attached.

All those bits can be replaced. But, better still, they can be preserved. Look after them and most will last a very long time. Properly maintained and looked after, your Defender will last for ever. Here's how...



INTERIOR

The seats are the most vulnerable parts of the interior, followed by the carpets and headlining (if fitted). Door trims can also let the side down.

Seats

Fabric and vinyl seats suffer from cuts and tears, and fabric from stains. The best way to protect them in the long term is to fit seat covers, though if you have a later XS model with leather-faced seats you won't want to cover them up. In which case a regular treatment with a quality brand of leather cleaner and feeder will help protect them from abrasion and cracking.

Carpets and mats

If your Defender has carpets, buy a set of rubber mats to protect them from abrasion. Mats and rubber flooring can be kept like new by giving them a good scrub with soapy water, rinsing, and then when dry treating them with tyre dressing on a frequent basis. Once that is done, they'll need no more than an occasional wipe with a wet cloth. Front floor carpets become worn and rucked up at the rear outer corner near the sill, and a spot of glue to hold it down will complement the single securing screw here.

Headlining

Smooth vinyl linings will stain if water or dampness reaches them. Avoid dampness condensing inside by airing through the front vents and windows when practical. Prevent water getting on top of the headlining by maintaining the sunroof seal where fitted, and on all models by running a thin bead of clear sealant across the roof, pressed into the join where the sloping front panel joins the rear horizontal panel.

Door trims

Door trims gain unsightly scratches and cuts from being kicked when climbing in, so take care. Much of the damage results from them



DILLERS 4X4

THE TWO DEFENDERS featured here are for sale at Diller's 4x4 in Leeds, who source exceptional Land Rovers with extremely low mileage. LRM's August 2013 cover model, a fine One Ten V8, was purchased by a very senior member of management at JLR. We spoke to Diller's founder and Land Rover enthusiast Dill Singh about finding good Defenders. "I only buy exceptional vehicles, they have to be just right. Sadly a lot of people don't look after their vehicles and there are loads of rust buckets out there. I only look for religiously maintained vehicles and they must have a good history. You need to know if they are trying to hide something or else you sit with the problem."

Judging by the quality of the vehicles in this feature Dill certainly puts his money where his mouth is. He had to go

to Northern Ireland to find the one-lady-owner 1998 300Tdi Defender 90 CSW with only 46,000 on the clock. The more we poked about it the more we had to marvel because we could not find any fault with it.

Before selling a vehicle Dill sends it for a check-up, Waxoyl, valet, MoT and service. It was for sale at £18,995.

For those that want to spend a little less, the 1993 200Tdi Defender 90 truck cab has only 20,000 miles on the clock. It has always been kept under cover and was owned by a now retired gentleman. It never left Bristol until now and its previous owner never drove it over 50mph. It was for sale at £17,495. Again proof that Diller's 4x4 are masters at finding old Defenders that look like new. See www.dillers4x4.co.uk or call Dill on 0113 2888058 or 07889 962189.

not being fitted correctly after removal for door repairs. The plastic plug clips holding them to the door shell usually break, and screws and push-plugs from the corners become lost. It's important to renew any fixings when the door panel is being refitted.

EXTERIOR

We're looking at bodywork here and, in particular, two types: steel and aluminium. Unfortunately, the aluminium panels are reinforced by steel frames and the mix of the two metals together causes electrolytic corrosion. This shows on the aluminium paintwork as white corrosion spots, and on the steelwork as rust. Vehicles with metallic paint have a particular problem and they can suffer from serious rusting on the door shells, externally and inside the shut-faces.

There's little to be done when white-spot corrosion appears on aluminium, though it can be slowed by treating the spots with grease or frequent applications of WD40. No matter how well they are rubbed down and treated before repainting, they are likely to re-appear in time. The only real cure is a new panel.



“Bulkhead corrosion is caused by faulty seals”

You've got to admit that this Defender (1998) is better preserved than LRM's Patrick (1974)



You can help preserve the panels and frames by removing interior trim and door panels, then treating any rusted frames with a rust convertor before applying grease or a wax treatment over the frames and between the frames and the panels. Most rear tail doors suffer serious white-spot corrosion and the only answer is replacement. If yours is good, help keep it that way by applying wax inside and treating rust on the inner frame. Check the inner frame for cracks caused by the weight of the spare wheel, and have them welded and reinforced. Consider fitting a swing-away style spare wheel carrier to avoid this.

Bulkheads can rust at the upper sides of the A-posts and the ends of the front panel around the opening vent flaps. Also check the inside of the bulkhead in the footwells and behind the lower trim for rusting. Again, cleaning back any rust and applying rust converter followed by primers and top coat will help preserve this area, but also check the footwells from outside and underneath to ensure water cannot enter here. Bulkheads also rust from inside the cab along the top edge, hidden from

view by the instrument panel and dashboard. Shine a torch beam behind the instrument panel to check and, if you see rust, consider removing the dashboard to check and preserve the area. This upper bulkhead corrosion is often caused by defective body and screen seals so, in the long term, these might need renewal, too. When the bulkhead and doors are in good order, apply an internal wax preservative treatment (see **UNDERSIDE**) to keep them that way.

UNDERSIDE

We need to start with a good chassis, and that can only be confirmed by checking every inch using a small hammer. If it rings, it's good, but a dull sound suggests rust and, if this isn't visible externally, the area will be rusted inside the chassis. A welder's chipping hammer (which has a heavy point) used aggressively in the tight corners and along the main rails next to outrigger welds will show weak areas that will cause future problems. Before applying protective treatment, all areas need to be properly repaired and, while the sections are

cut open for repair, internal rust scale should be cleaned out from inside. All rust needs to be treated with rust convertor before overpainting.

If the chassis is good, keep on top of the paint system by inspecting and touching up each year, preferably just before the winter salt gets on the roads. A better option is to protect the chassis with a self-healing wax preparation such as Dinitrol (dinitrol.co.uk) which can be sprayed all over, in the tight spaces and inside the sections. There are specialists to this job. Ed had his own Defender 110 treated by Rustmaster in Knutsford (07748 274966) who currently offers a 10 per cent discount to LRM readers.

Repair sections, such as outriggers, rear crossmember and rear quarter and half chassis are available off the shelf. But before paying to have a rear end fitted, confirm the front end will last as long as the new rear. A new galvanised chassis solves all these problems.

Underbody

Most underbody is aluminium, which still needs protecting from corrosion. Grease or a

wax treatment applied around body mountings and anywhere in contact with steel, including bolts, will help preserve the structure. Steel reinforcing struts across the rear body underside are slow to rust away, but need to be similarly checked and preserved.

Running gear

Steel plate axle differential covers corrode from inside and out, so keep these painted and replace the oil frequently if you're wading. Protect brake and fuel pipes by keeping them clean and greased, especially around pipe unions and caliper or wheel cylinder connections.

Brake fluid absorbs moisture which corrodes the bores of the calipers, master cylinder and wheel cylinders, so avoid this by renewing the brake fluid every three years. Remember that when the vehicle is out of use, oil seals dry out and deform, and moisture in the transmission oils causes internal corrosion. So driving, and regular oil changes will help preserve the running gear. If the vehicle is to be laid up for a few months, it's beneficial to renew the transmission oils, and smear grease on the polished surface of the steering swivel housings.

ENGINES

Engines corrode from inside unless protected by in-date anti-freeze solution. Neat water is unsuitable in cooling systems, even in summer. Remember that corrosion inhibitors degrade in old antifreeze, allowing aluminium parts to corrode, and the deposits wash through to block the radiator. And the cast iron cylinder block on the early 2.25 and 2.5 engines (pre-Defender Ninety/One Ten) can corrode through from the side coolant passage. Corrosion deposits also wash through and



eventually block the radiator.

Regular oil and filter changes, using a good quality oil of the correct specification and a quality filter, is the most vital job in preserving any engine. Old oil has less lubricity, less ability to cool the bearings, and it holds impurities that corrode bearing surfaces.

A choked air filter restricts the air entering the engine, so the engine is worked harder for the same performance. Some 'sports' filters allow larger size particles through which can cause engine and turbo abrasion. The engine and its management system are designed to work best with standard, clean filters.

Breather hose condition affects engine efficiency. Likewise, turbo hoses and their clips need regular checks because leaks will reduce performance and may allow abrasive dirt to be drawn into the engine.

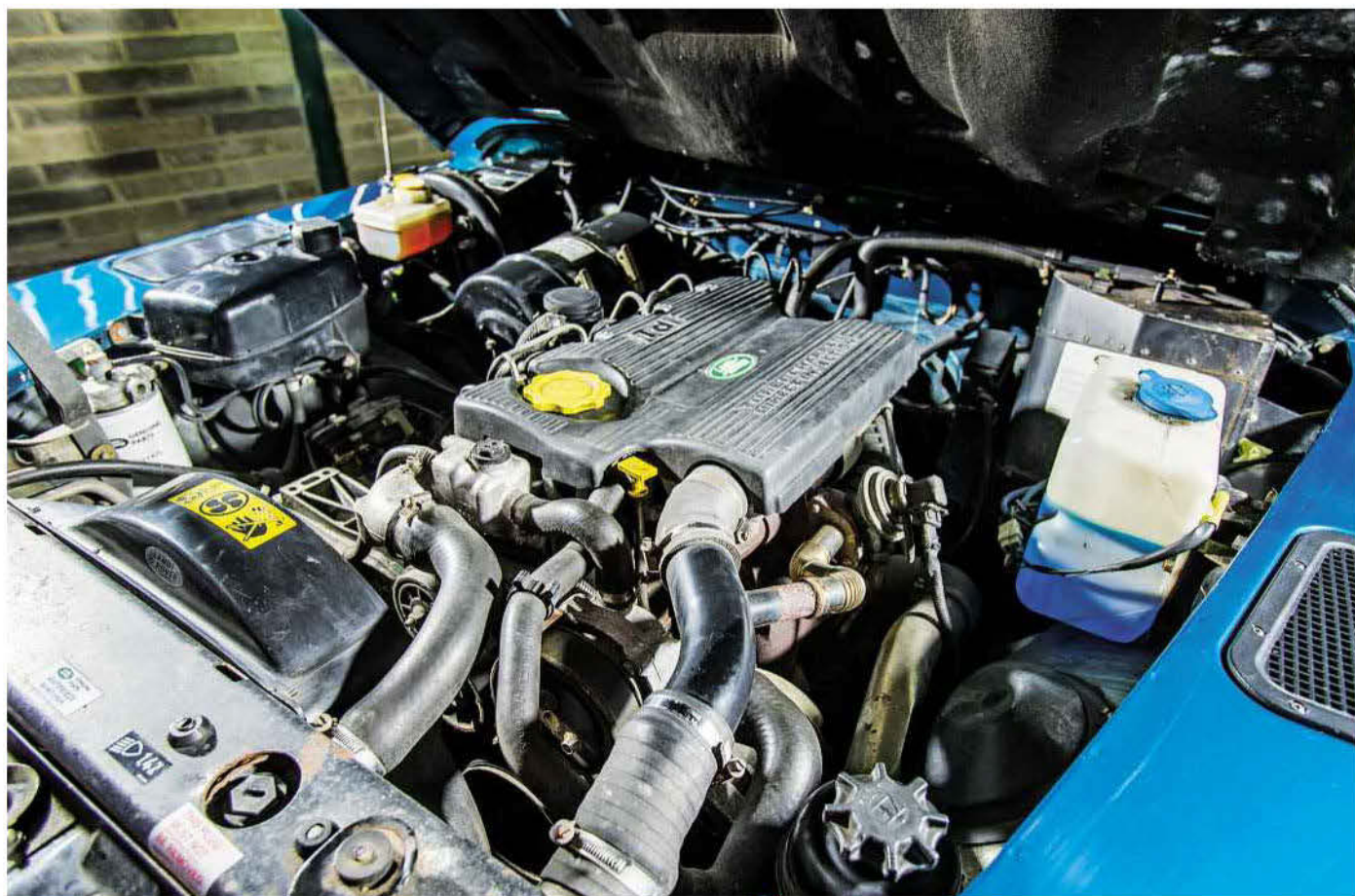
The best way to preserve your engine is through regular, quality servicing using quality components, and by driving smoothly, and by stopping to investigate any change in the normal temperature gauge reading. We can expect 250,000 miles, and much more, from a well-serviced and well-driven Defender engine. However, there are a few peculiarities on individual engine types that can shorten its life drastically.

Rover V8

More than any other engine, the V8 needs regular oil changes to prevent wear of the camshaft and valve train components. Turn to page 172 in this issue for a full V8 feature.

Early 2.25 and 2.5 engines

The pre-Defender Ninety/One Ten used 2.25 and 2.5 petrol and diesel engines which are prone to coolant passage corrosion, as mentioned above. Diesel cam belts need to be



“The best way to preserve your engine
is through regular, quality servicing”



Even with Patrick behind the wheel, this 1993 truck cab still looks good as new



“Driving smoothly will make it last”

changed at the prescribed interval to avoid potential destruction.

200 and 300 TdI

Solid as a rock. But 200TdI cylinder heads are becoming scarce, so keep internal corrosion at bay with frequent antifreeze changes. Watch the coolant temperature so the head cannot become warped by overheating. They can be re-faced, but generally only once. Attend urgently to head gasket troubles because a gas leak can erode the surface of the head. Change the cam belt at the correct intervals.

Td5

The cylinder block components are superb, but the cylinder head, especially on early models may crack. The fuel is fed to the injectors through drillings in the head (and also the return fuel on early heads). Cracks have been reported at these drillings, and at the injector seatings, allowing fuel to leak down into the sump, causing the sump oil level on the dipstick to rise. So keep a regular check on the oil level and, if it rises, or the dipstick smells of diesel fuel, act quickly to protect the engine. But the most likely source of fuel leakage into the sump is from failed injector seals or damaged injector seats. So these need



to be checked and replaced/repared first, before considering cracks in the head. Incidentally, such cracks are difficult to confirm, and are unlikely to be detected by the usual coolant space pressure test.

Head cracks are caused by thermal and/or mechanical stress. The Td5 head is already fairly stressed due to the type of rocker-operated injector system, and those fuel galleries. Hard driving, such as prolonged high-speed or heavy towing, and certain performance tunes, can add further stress, and the first sign of this will be a warped exhaust manifold. As always, the best way to preserve the engine is by driving competently and not

abusing or flogging the machinery.

Unlike earlier engines, the Td5 doesn't like to be driven with an overheat issue. Leakage at the head gasket under power for prolonged periods can damage the cylinder block gasket face, and it cannot be re-machined. Overheating can also occur due to failure of the coolant pump drive. The pump is behind (and driven by) the power steering pump shaft so, if there's concern, remove the PAS pump to inspect the drive to the coolant pump. The Td5 has a timing chain, so no cam belt to worry about.

CONCLUSION

The best way to preserve all the mechanical systems throughout the vehicle, is by driving smoothly and thoughtfully with an understanding of the processes that are going on in the engine, through the transmission and axles, brakes, steering and suspension. It's useful when driving, to imagine the thermal and mechanical strains these parts continually undergo. Driving hard and abusing the vehicle's inherent ruggedness simply wears everything out much more quickly. Using the machine smoothly and competently saves money, repairs and general deterioration. It's the way to make it last.

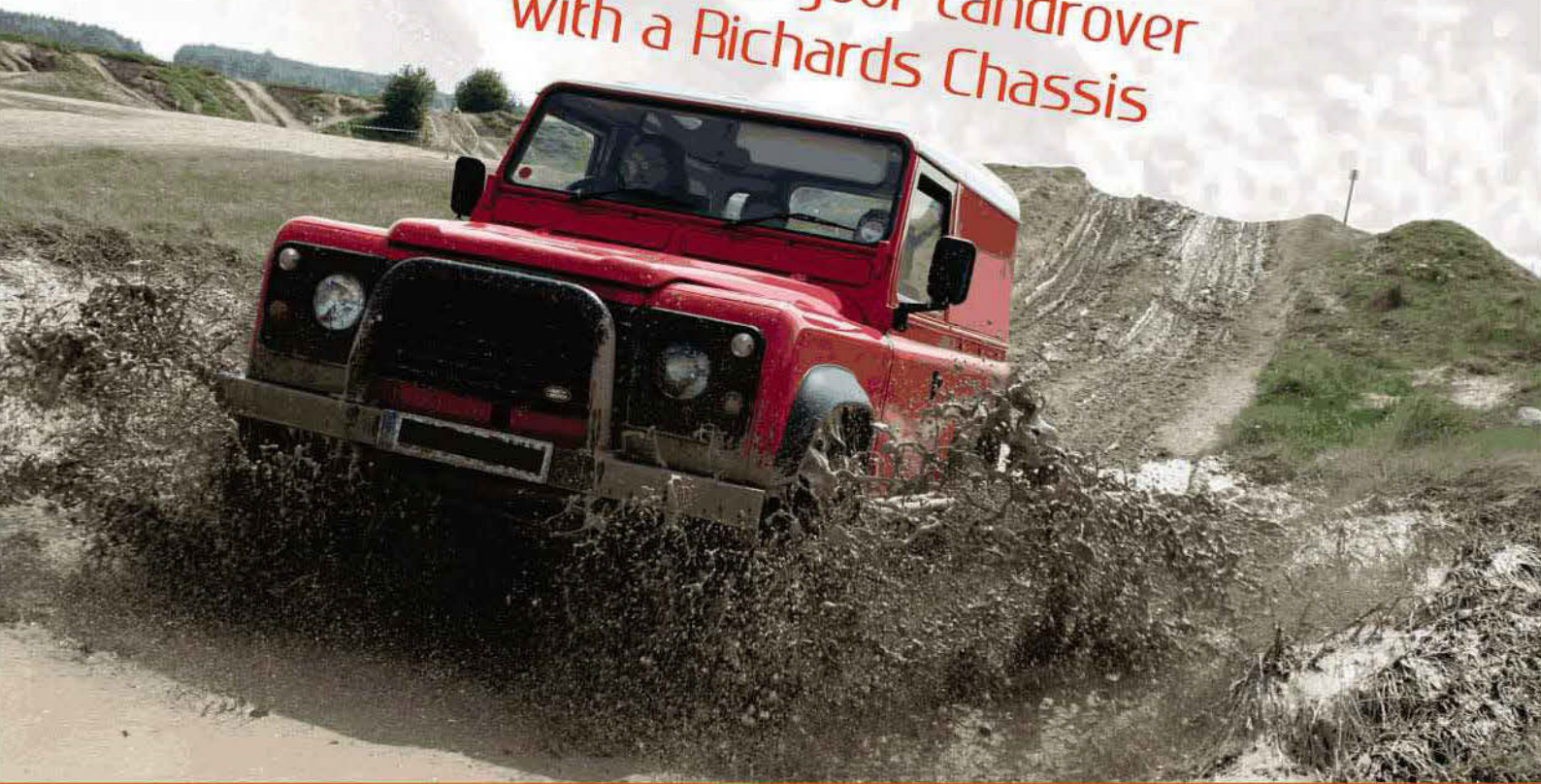
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**DISCOVERY 2
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Story: Stephanie Barber

Pictures: Daniel Calvert

DREAM GARAGE

Fancy a garage that's as smart as your Land Rover? This could be just what you're looking for...

For most Land Rover owners, functionality and aesthetics are important. Whether you're the owner of a Series I or a modern Range Rover, owning a Land Rover is a statement that defines who you are and what you're about. Whilst many Land Rover drivers expect the best from their vehicles, when it comes to taking them home at night, many owners it seems will happily drive their 4 x 4s into garages that don't really do justice to them – which is a shame.

With many home owners spending hundreds of thousands of pounds on their properties, it's no surprise that some want to ensure that the garage is in keeping with the standards they expect to see in the rest of the house.

One company that's been helping home owners do this is Dura, which pioneered the concept of the fitted garage.

Working on behalf of clients across the UK, Dura has created an interior solution for customers wanting to bring an added sense of luxury and organisation into what's often the forgotten room of the house. A customer who embraced this concept is Michael Smith, a Disco 4 owner.

When he first approached Dura, Michael spent a lot of time describing his lifestyle and the intentions he had for transforming his garage. As the proud owner of a Discovery, it







FOR MORE INFO

FOR MORE info on this garage transformation go to www.duragarages.com

Everything neatly stowed in a set of cabinets which look smarter than many kitchens.



Who'd dare not to clean every socket before putting it away?

“Michael's garage often became a dumping ground”

was clear from the outset that Michael was passionate and enthusiastic about his ideas, choosing to create a space that beautifully matched his adventurous and adrenaline fuelled lifestyle.

When pulling into Michael's driveway for the initial survey, it became apparent that he liked every part of his house to be kept just so.

With immaculate lawns, a newly cleaned Discovery and his children playing happily in the garden, it was clear what his expectations might be.

During the hour-long consultation he defined the Discovery's bold, distinctive design, his appreciation of this and how he wanted to incorporate these elements into his new garage.

With an active and busy life style, Michael's garage often became a dumping ground, with tennis balls all over the place, sports equipment left on the floor and just enough room to park his pride and joy.

Michael had seen Dura's modular cabinets in his local dealership and wanted to seamlessly match this professionalism where his prized possession was serviced.

It was Michael's aim to achieve clean, yet functional aesthetics, whilst incorporating storage space in a comfortable environment that would ultimately complement his active lifestyle. Once the visual layout proposals had been received, Michael gave the project his complete approval.

The design incorporated overhead lockable cabinets to increase general storage, as well as a series of stylish base cabinets for additional tool storage.

To get everything off the floor and on to the walls, Michael opted for Dura's Storewall products to organise his sports equipment and garden utensils.

The design was completed off in a sleek silver paint finish that replicated the contemporary design of the Discovery he'd come to love and provided all the essentials this adrenaline fuelled junkie needed.

Now all Michael needs to do is buy a classic Land Rover because we all know no Land Rover garage is complete without a little oil spill or two. And a garage like this might feature a kitchen roll dispenser to mop them up.

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MISSION ^{45 YEARS} IMPOSSIBLE

In 1972 a British colonel led two Range Rovers, 28 horses, 12 murderers and a Series IIA across the Darien Gap. *LRM* caught up with him 45 years on

Interviewer: Patrick Cruywagen Studio Photography: Paul Harmer
Archive photographs: Provided by Colonel John Blashford-Snell



Like many a crazy adventure, this one began with a liquid-fuelled lunch. The venue was Canning House in London. “Colonel Julian du Parc Braham, eyeing me through his monocle, asked: ‘Have you ever thought of driving from Alaska to Cape Horn?’ ‘No, but I do not imagine there would be much of a problem, simply a question of time and petrol.’ ‘Then you do not know about the Darien Gap,’ he said sharply. I didn’t!” This excerpt was taken from Blashford-Snell’s autobiography *Something Lost Behind The Ranges*. In it the Colonel devotes two chapters to the now-legendary Darien Gap crossing by the British Trans-Americas Expedition in the early 1970s. For those in the dark, the Pan American Highway system is roughly 17,000km long, stretching from snowy Alaska in the north, to Tierra del Fuego, the southern tip of Argentina. Even today the highway remains incomplete, thanks to the Darien Gap in the middle. It measures only 250 miles in length but the swamps, highlands, hornets, creepy crawlies, vampire bats, deadly snakes and hand-sized spiders are enough to make even the toughest man call for his mamma or a medevac.

Both of the expedition Range Rovers were of the left-hand-drive variety as they were built for the Swiss market. They were

repainted for the expedition but if you pop the hood you will still see the original Sahara Dust paint in the engine bay. Both made it home to Britain and today one can be seen at the Heritage Motor Centre while the other forms part of the ever-expanding Dunsfold Collection. They were both stock standard but because the expedition needed maximum storage space, the rear bench was taken out and replaced with a Rover P6 saloon seat. Over to you Colonel.

Give us a little more detail as to how this whole expedition came about?

It all began with that Canning House lunch in London that you’ve already mentioned where several Latin American countries gave the UK a little challenge – cross the Darien Gap using a couple of 4x4s to show us where to build our road. In 1962 Chevrolet tried the crossing using Corvairs, and they had to leave them behind.

Now it was not in the Americans’ best political interests to have a road linking North and South America as they were pretty involved in Panama at the time. So at that lunch the decision was taken that the UK, which had a rich history of





exploration and adventure, would take on the challenge.

Why did you lead the expedition?

Initially they decided that a certain young, able navy officer would lead the expedition but he could not get time off work. At the time one of my side jobs was looking after Army expeditions, so they rang me up at the Ministry of Defence and asked if I would be interested in leading it? I had never been to South America before. I didn't know an awful lot about jungles but I did know a bit about Land Rovers and expeditions. My commanding officer thought the expedition would be good for morale and gave me the go-ahead.

What about a recce?

We got hold of a young, well-travelled mad Irishman called Brendon O'Brien. He had recently overtaken a police vehicle at great speed in London and was keen to get out of town for a while. We gave him £100 and off he went.

By some miracle he walked through the gap, returning three months later, thin and haggard. For two hours I listened to his story and examined his photographs. In the end he said 'Well, I think you can do it, but don't ask me to come with you.' With that he was rushed off to the Hospital for Tropical Diseases. He is now a stunt pilot and flies a bi-plane that lands on trucks. Based on his report we made our plan.

Who took the decision to use Range Rovers?

Motoring journalist Tim Nicholson, an expedition scribe, already had an established link with British Leyland. He had written a number of books, including one about taking the first car into Abyssinia. The Darien Gap would be a great way to showcase the capabilities of the recently-launched Range Rover.

How did your go about recruiting your team?

We were being officially supported by the British Armed Forces.



Above: The expedition-saving Series IIA arrives in Sante Fe. The colonel is pictured on the right in his favourite white pith helmet. It once saved his life when his mule tripped and his head smashed into a tree



CONTACT DETAILS

THE COLONEL still gives illustrated lectures entitled the "Darien Breakthrough." For more details contact Anne Gilby at the Scientific Exploration Society (SES) on 01747 854456 or jbs@ses-explore.org

YOU CAN purchase a copy of his autobiography *Something Lost Behind The Ranges* through SES for £12.50 + £3.50 p&p. The Colonel still leads expeditions today with a strong focus on helping youngsters, providing water where needed and elephant-back safaris. For more see www.ses-explore.org



"I didn't know an awful lot about jungles, but I did know a bit about Land Rovers"

Much of the recruitment took place at my own regiment, the Royal Engineers. We wanted soldiers that were very tough, extremely fit, highly practical and resolute engineers. Our vehicle mechanics came from the 17/21 Lancers and they were trained up on the Range Rovers by Land Rover. Our expedition numbered about 60 in total, including scientists, aircrew and a few Americans.

What about the use of locals?

To supplement our workforce I purchased a dozen ex-murderers from a prison in Panama for a case of Black Label Whisky. We promised them freedom in exchange for work. They were terrified of our Gurkha Sergeant, Limbu Partapsing. He would run his *Kukri* (fighting knife) across his throat as a warning to any of the lazy prisoners. They were terrified of him and nobody dared run away.

You almost lost one of the Range Rovers to a river.

It fell into a hole in the fast flowing Tuira River. Luckily one of the guys had a Tirfor winch that I still have today. We attached it to the back and got it out. One of our mechanics took 36 hours to get it going again. A remarkable feat considering all its electronics and complexities. Everything had to be taken apart and put back together again.

That wasn't the end of the problems?

At one stage the expedition ground to a halt due to broken rear differentials. It was a desperate worry because the mechanics

had done all they could. Range Rover Project Engineer Geof Miller flew in from the UK with re-designed differentials. Up until then we had broken nine rear differentials and Geof bought with him nine new back axles. He spent a week or two with us fitting them. When they broke they literally exploded with bits coming up through the floor. Luckily no-one was sitting in the back seat.

I heard you had tyre problems?

Initially we had the wrong tyres. We did replace them with ones boasting a more aggressive tread pattern for traction. When the engine roared and the tyres gripped, something had to give and it was the diffs. As Geof correctly pointed out, the Range Rovers were overloaded.

How did you make a track for the Range Rovers?

Originally we used Hillbillies, which essentially are tracked wheelbarrows. You stand behind them and push them with the help of a little petrol engine of course. We tested them in the UK and they worked fine, but out there it was so hot, they overheated and the mud caked in the tracks causing them to jam. We had to leave them behind.

And then?

We needed to make another plan. Our contact in Panama managed to find a Series IIA that had recently rolled, but was otherwise sound. It was flown into Santa Fe and we now had a new pathfinder vehicle. We made it as light as we could and it





“Sadly we did lose 12 Colombians”

Above:
The Series IIA
leading the way
and creating a
track for the
Range Rovers
to follow

was loaded with the engineer's gear such as cables, saws and chains. It then went ahead to make a new track. The Series IIA saved the expedition and without it we wouldn't have reached the end.

We know that both Range Rovers returned to the UK. Where is this IIA?

When it was all over we flew it back from Colombia to Panama in a DC3. There it was presented to the local commander of the army. He jumped into it and drove away. We had forgotten to tell him that the brakes didn't work and so he crashed into a wall. Fortunately he was okay. I don't know what happened to it after that.

We have heard that the Queen has a soft spot for this IIA

Yes. After the expedition we were invited to lunch with the Queen at Buckingham Palace to celebrate the Darien Gap expedition. As we sat down she leant over and told me that she did like the picture of the Series IIA on the raft with our Union Jack flying above it. She had seen it in the papers. At that same event Prince Phillip told me that he had used a similar raft when courting the queen so that he could get across the water to see her.

A Range Rover can only carry so much. What did you do with the rest of the supplies?

We had 28 marvellous horses and most of them survived. To protect them from the bats we made special blankets, using parachute material, for them to wear at night. Years later when I went back to Colombia I saw for myself how the 28 (only two lucky stallions in that number) had become hundreds as they bred on the edge of a little frontier village.

What about getting supplies along the way?

A Beaver plane was critical to the success of the mission. It was leant to us by the Army and was able to fly anywhere. It assisted with critical reconnaissance and parachuted supplies in to us.

Any threats from the wildlife?

One night hundreds of wild pigs attacked the camp and the horses. There were pigs everywhere and you can't just go at them with machine guns as you might kill your own forces. The wild pigs are carnivorous, so they will bite and eat you.

What about security?

Luckily we were English so the Panamanians and Colombians got on with us, despite the fact that they hated each other and the Americans. So we had carte blanche really and could move about freely. It was really an extraordinary situation. Today the gap is a no-go area because of the FARC revolutionaries.

Did you have special protection for the swamp section?

The Colombians provided us with a manned gunboat. You need to remember that they had already lost six men when a boat turned over, yet they kept going. This was the low point of the trip because these guys had come to help us succeed in our mission. We had one man on the overturned boat but he managed to swim ashore.

What about the rate of attrition?

Despite the fact that we were a fairly experienced bunch, we still had a 50 per cent casualty rate due to the dangers of the jungle. Fortunately none of the British expedition members



45 YEARS OF RANGE ROVER

ENGLAND CHANGED for ever in the middle of June 1970. In the space of five days we lost the World Cup to our greatest rivals and saw Harold Wilson's Labour Government suffer a shock defeat at the General Election to Ted Heath's Conservatives. Some political commentators blamed England's defeat to West Germany for the election result!

With the country in such turmoil, you'd expect other events from that period to pale into insignificance. Yet sandwiched between England losing the World Cup (June 14) and the Tory victory (June 18) a car was launched that would rock the world.

On June 17 1970, in Cornwall, the original Range Rover was launched. Unlike Sir Alf Ramsey's football squad and Ted Heath's administration, it's a vehicle that is as relevant today as it was 45 years ago. Perhaps more so, because in 2015 the Range Rover family is Britain's most successful automotive export.

But who was to know that on that fateful day when the new car was unveiled? Back then, the world's first luxury 4x4 was seen as an oddity. Who would pay the eye-watering asking price of just under £2000 (about £25,000 in today's money)?

The answer was a lot of people. From the moment it went on sale in September that year, Land Rover couldn't keep up with the demand. Why the excitement? Well, it could have had something to do with the disc brakes all round... the coil suspension... the lusty 3.5 V8 engine...

But for many it was simply the distinctive good looks of the new car. It looked so good and was so popular that it remained in production for 26 years – even after its successor was launched.

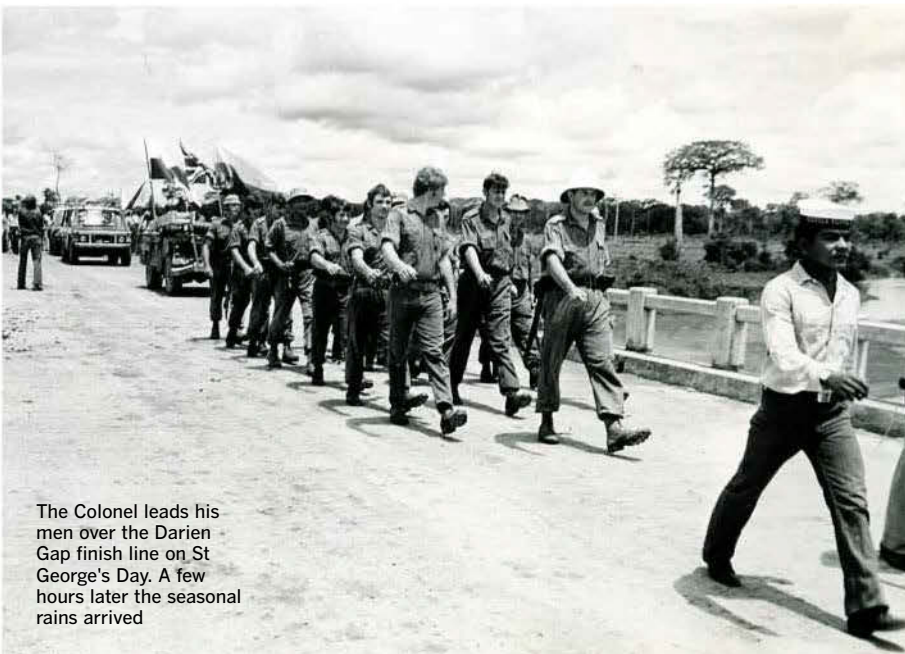
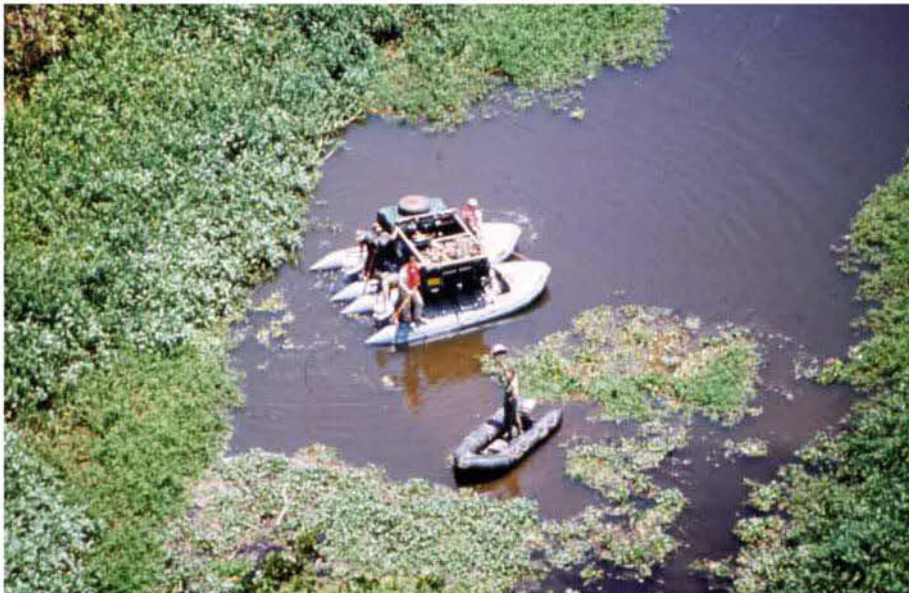
That second generation successor, the Range Rover P38A, wasn't as universally loved as the original (which was badged the Range Rover Classic while the two models overlapped). But the P38A hinted at the future of the model by introducing a whole host of sophisticated new electronics – arguably a little too sophisticated, for they quickly earned a reputation for failing.

The P38A was replaced in 2002 by the third generation Range Rover, the L322, which was planned and developed under BMW's ownership of the company and launched after Ford had become the new paymasters. It turned out to be massively successful and was joined in 2005 by the first of the model's derivatives – the Range Rover Sport, which shared a platform with the Discovery but debuted with the marque's fastest-ever production engine – the 140mph supercharged V8.

It was followed by the smaller Range Rover Evoque in 2011. In 2012, the fourth-generation full-sized Range Rover, the L405, with levels of luxury unheard of back in 1970. Prices start at just under £74,000.

Yet the evergreen Range Rover Classic has never been more popular with enthusiasts and secondhand models are changing hands for ten times what an original would have cost new in 1970.

England may never win the World Cup and governments will come and go. But the Range Rover is a perpetual winner that will live for ever.



The Colonel leads his men over the Darien Gap finish line on St George's Day. A few hours later the seasonal rains arrived



“Once you were in there, you couldn't get out”



Above:
This Colombian gun
boat provided
protection during the
tricky Great Atrato
Swamp crossing



died but sadly we did lose 12 Colombians. At the start of the expedition our vet weighed 19st and at the end he weighed 15st. We all got the most awful foot rot as our feet were wet all the time. This was despite the fact that we had the best boots.

I think that without a doubt it's the hardest thing I have ever done. Even today when I recruit people for tough expeditions I always ask their referees: 'Would you take this man into the jungle?'

You got through the gap just before the big rains came

It was a close run thing. When we reached the end of the Gap on St George's day, it was time for parties, girls and beer. I got into bed around 2am and woke to what sounded like an earthquake. The rains had come and the swamp started to fill. If we had not made it through the previous day, we wouldn't have made it at all. We joke today that we made it by just eight hours on the 100th day after setting off.

Did you ever consider giving up?

It was that sort of expedition where if common sense had prevailed, we'd have packed up and pulled out. However once you were in there, you couldn't really get out unless you abandoned your vehicles. We were already receiving calls from Toyota saying they'd loan us a vehicle, but that wasn't an option of course. The Range Rovers were remarkable once we got them moving. Their power meant they could get up just about any slope or hill.

What would you say to anyone thinking about doing something similar today?

Even today the Darien Gap is one of the most dangerous places on earth thanks to the FARC forces. I recently read a book about some orchid collectors who went to the area and were captured by the FARC. After realising they were penniless, they were released. Not all stories in the Darien Gap have a happy ending like that.



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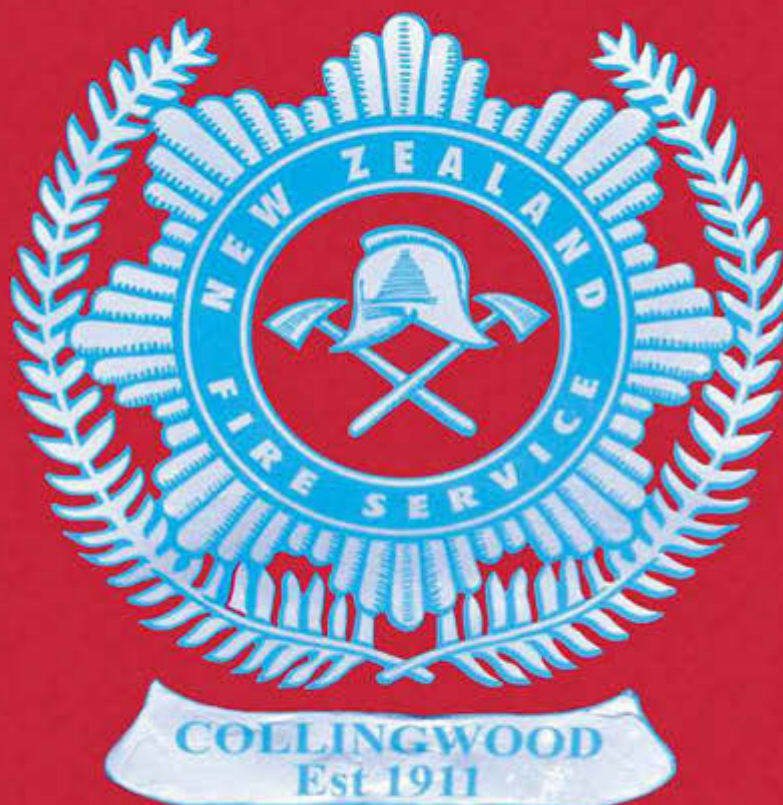



NENE OVERLAND
Est. 1988



Below:
Even the engine
got the red paint
treatment on this
fire-fighting classic





AUCTION STATIONS

Looking for an ex-working Series I with a truly fascinating history? A Scottish auction house may be a good starting point

Words and photographs: Bob Weir

During their heyday in the 1950s Series Is were hugely popular in British Commonwealth countries – typified by the fine example on these pages, which spent its working life in New Zealand but recently turned up at the Morris Leslie Classic Vehicle Auction in Scotland.

“The Land Rover is in the livery of the New Zealand Fire Service,” says auction manager Keith Murray. “It belongs to an overseas enthusiast, and has been entered in our spring sale. The rest of the vehicle’s history is a bit of a grey area.”

The Morris Leslie Group was established in 1977, and is still in private ownership. It was originally set up as a plant sales company, but over the past four decades has diversified into other areas. The group currently employs over 250 staff spread across 15 locations throughout the UK.

Its headquarters is based at Errol Airfield, between Perth and Dundee, which originally opened in January 1943. Incidentally this facility was used by the RAF as a special conversion unit for Soviet aircrew taking delivery of British aircraft, for use against the Germans. The base was equipped with three runways as well as several buildings, which are still visible from the air. The military role of the airfield ended in 1948, when the RAF moved out. Some of the

buildings became derelict, and lay disused for many years. After Morris Leslie purchased part of the site, they began using it to auction off plant equipment.

“The Group has also been holding regular car auctions for many years,” Keith explains. “Because of the growing number of enquiries, we recognised the need for a specialised auction aimed at older vehicles like early Land Rovers. I believe we’re currently the only company in Scotland holding these auctions on a regular basis, and sales to date have attracted over 200 entries. Apart from some rare cars these have featured commercial vehicles, dating back to the 1930s.”

Keith originally comes from Chester, but has lived in Scotland since 1976. A veteran of car sales, he joined the Morris Leslie Group in September 2008.

He says: “Classics auctions are a fascinating business, and our vehicles come from all over the country. We also get quite a lot of foreign sellers using the auction house, probably because of the large number of classic vehicle enthusiasts living in the UK. Morris Leslie also owns nearby Perth airport, so communications to the Continent are excellent. During the short time we’ve been running the classics auction, I’ve been amazed at some of the vehicles that have come through our doors. We’ve had everything from old



FIRE FIGHTING IN NEW ZEALAND

IN 1854 the first New Zealand Volunteer Fire Brigade was formed in Auckland. After starting out with only buckets, the brigade soon upgraded to using manual pumps. These were provided by insurance companies, and Auckland City Council.

By 1903 the first motorised appliance in the whole of Australasia had entered service with the Wanganui Fire Brigade. Three years later the Fire Brigades Act 1906 was the first piece of New Zealand legislation specifically devoted to fire protection. The Act initiated fire boards in metropolitan areas, and established the role of Inspector of Fire Brigades.

In 1913 a member of the Dunedin City Brigade invented a new system of street fire alarms. In the event of a fire emergency, a box on a lamp post would have its glass smashed by a member of the public. This relayed a signal to a switchboard operator, who then sent a fire engine to the appropriate address. This would become the standard alarm system used in New Zealand for the next half a century, and was believed it or not still in use in some areas as late as the 1970s.

In 1954 a Fire Service Regulation, Code of Practice and Co-ordination Scheme was created to promote extended co-operation between brigades. This paved the way for the new Fire Service School at Island Bay in Wellington, which opened in 1957. In 2006 the National Training Centre was opened in Rotorua. It has the latest state-of-the-art training tools, and is the international benchmark for fire training facilities.

“We get a lot of foreign sellers using the auction site”

classics that have been stored away for years, to genuine barn finds.”

As is often the case with auctions, sometimes very little is known about the vehicles coming through the sales room.

“Many of our clients contact us direct, and have used us on a number of occasions,” says Keith. “Some of the vehicles are quite rare, and a few have a story to tell. But unless there’s a particular reason why a vehicle’s provenance should add to its sales value, information is often minimal. We also get some unusual entries, like this RHD export Series One.”

The auctions normally take place on a Saturday from 10:30 onwards, at the airfield’s 50 acre site. Facilities include a large undercover hall, on-site café, free parking and manned security around the clock.

“Mr Leslie’s son Gregor normally mans the auctioneer’s podium on the day, although I can also take over if required,” says Keith. “Classic auctions in Scotland are still comparatively rare, and an enthusiastic audience usually turns up. A lot of the vehicles in the auction will have been stored away possibly for years, and this could be the first opportunity members of the public have had to see them. DT 3524 is a typical example. Classic Vehicle enthusiasts are very keen on old fire appliances, and we’re expecting a lot of interest.”

The New Zealand Fire Service (NZFS) is the country’s main firefighting organisation. It was established in April 1976 when the existing local fire boards and fire brigades merged into a single body, under the auspices of the New Zealand Fire Service Commission. It is one of the few fire services worldwide to have been given jurisdiction over the whole country.

The service is responsible for providing fire protection primarily in urban areas, and currently employs 1700 firefighters manning 79 fire stations in major towns and cities. The remainder of the country is served by over 8,000 volunteer firefighters, and 360 volunteer fire brigades. In addition, it employs over 600 support and communications staff, based in three busy centres.

In a typical year, the NZFS can attend over 70,000 fires. The service has also taken responsibility for several other roles, including hazardous material incidents, vehicle extrication, urban rescue, as well as

responding to natural disasters and emergencies caused by severe weather conditions.

“The Series I has the chassis number 26160899, which means it was made in 1952,” says Keith. “The number also indicates a basic 80-inch, 1997cc, (‘Siamese Bore’), RHD export model.”

A total of 3,614 RHD Export models were produced in 1952, and many were destined for the far reaches of the British Commonwealth. Several ended up in remote outposts such as British Honduras (now Belize), Southern Rhodesia (Zimbabwe) and the quaintly named Demerara (Guyana). Several vehicles were also sent to New Zealand.

Keith says: “As you can see the Land Rover is still kitted out in the livery of the Collingwood Volunteer Fire Brigade. The registration number also appears to be genuine.”

The issue of permanent registration plates was only introduced in New Zealand in 1964. DJ 3524 signifies the year 1968, although why the Land Rover was only registered at this particular point in its career remains a mystery. The history of its service career is also a blank.

The town of Collingwood is located at the northern tip of New Zealand’s South Island on the shores of Golden Bay. The town is named after Admiral Cuthbert Collingwood, Nelson’s second-in-command at the battle of Trafalgar. It is also the northern gateway to Kahurangi National Park.

The town grew rapidly during the gold rush years of the 1860s, and at one point there was even talk of making Collingwood New Zealand’s capital. However, the rush moved south, and the town settled for providing services to the local farming community. In 1904 a fire destroyed most of the township, but it also sparked the need for a fire fighting force. In 1911 the local brigade was formally established.

Collingwood’s volunteer fire station is part of Region 4 of the NZFS, and most of the volunteers hold down full-time jobs. The partnership between the NZFS, volunteers and their employers is based on mutual benefit. An Employer Recognition Programme aims to assist in the acknowledgement of the contribution made by employers to both the fire service, and the local communities.

The brigade currently operates out of a 17-year-old station, and responds to over 30 emergencies a year.

FOR MORE INFO

MORRIS Leslie Vehicle Auctions, Errol Airfield, Errol, Perth PH2 7TB. Tel: 01821 642574. The vehicle auction service includes a realistic valuation, a collection service and vehicle preparation. Internal storage is also available. There is a £50 entry fee (plus VAT) per car, along with the usual buyers' and sellers' premium. There is no entry fee for tractors and machinery, although the premium still applies. Admission on the day is £5, which includes car parking and a (vital) sales catalogue.





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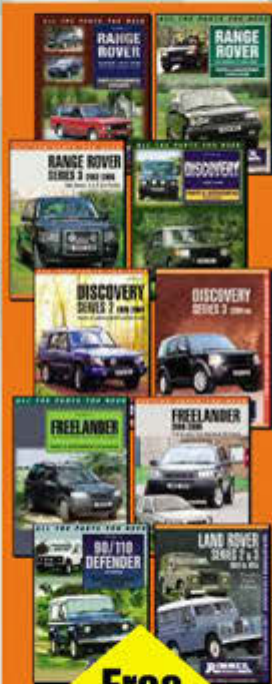
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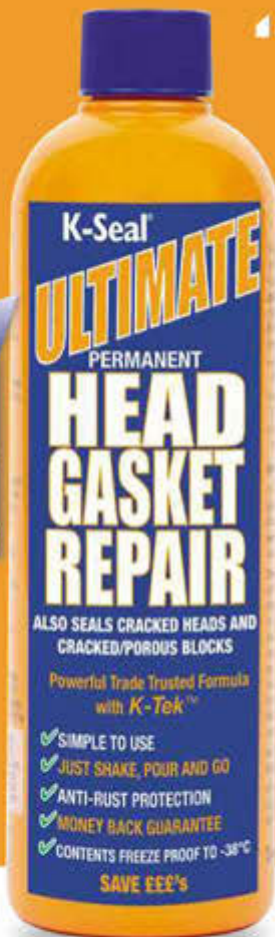
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UNDER AFRICAN SKIES

Englishman John Muirden uses a
very special Series I during his
adventures in southern Africa

Story and photos: Roger Gaisford



One at a time please
– Sir Tinley crosses
one of Zululand's
single-track bridges



Old motor vehicles hold a great fascination for many. Some of us are lucky enough to have large collections of them, while others like to attend shows held to celebrate their continued existence. John Muirden from Mansfield, Nottinghamshire is no exception. Years ago John lived in Zululand, South Africa, where he owned a 1950s Series I, something which gave him a great deal of enjoyment and pleasure. Now he was keen on finding another one.

His Land Rover story began when he was six years old and his dad was a health inspector in Mongu, Western Zambia, on the banks of the Zambezi. His daily transport was a SWB Series I Station Wagon. John recalls sitting between his parents on the front seats as they made their annual holiday trek from Mongu to Plettenberg Bay – a four-day, 1600-mile journey. Much time was spent watching the speedometer needle shaking around the 50 mph mark during this long trek to their coastal destination. Needless to say John was nowhere to be found when the time came for the return leg back home.

After some years the Muirden family moved to Bulawayo in Zimbabwe where his dad drove a Series IIA. During his National Service with the Rhodesian Army, John was lucky enough to be involved with Land Rovers again. Later, when living in Zululand, South Africa – where he worked for ESKOM, the national electricity supplier – their work vehicle of choice was the Ford and Land Cruisers. However, you can't keep a good Land Rover man down and soon John had a gaudy, yellow-painted 1957 88-inch SI Station Wagon. In this conveyance he took part in the first Old Trucks meeting, an annual gathering of old 4x4s, first held at Babanango, Zululand, in June 1996.

In 1997, John took his brood of daughters off

to live in England, settling in Nottinghamshire. It was not long before he was again involved with Land Rovers, as he purchased several.

He started a business, Unbeaten Tracks, selling South African outdoor clothing and camping equipment at Land Rover shows around England.

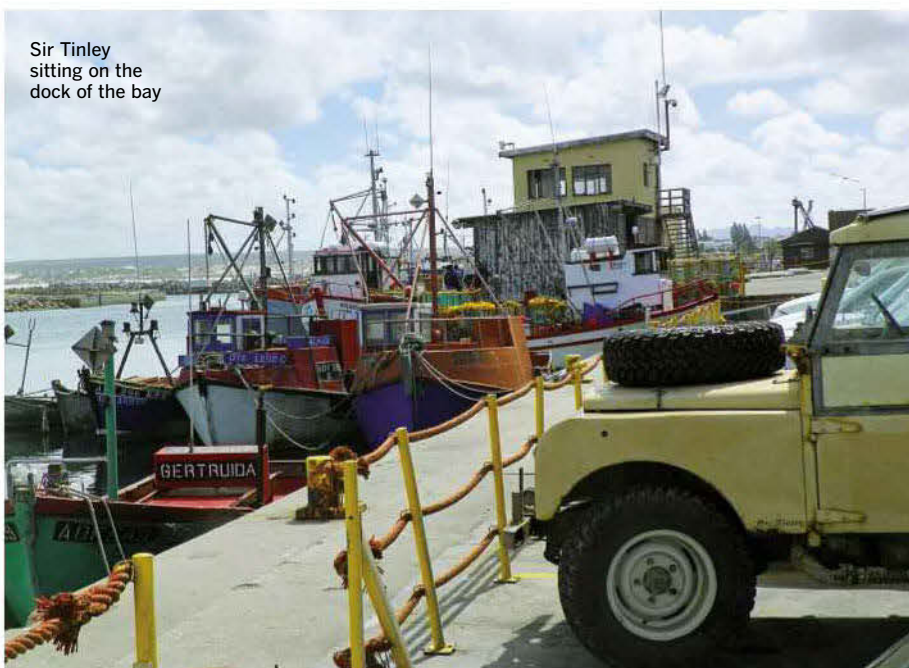
They say that while you might leave Africa, it will never leave you. John is proof of this and in September 2013 he returned to Botswana's Tuli Block for an Old Trucks meeting. At this gathering he declared that he would attend all forthcoming meetings, but before the next one he would have to find himself a Series I.

Soon afterwards, the sale of a Series I named

Sir Tinley was announced. This was not any old Land Rover. Sir Tinley was once the mainstay of Conical Hat Expeditions, which undertook runs through some of the toughest four-wheel-drive terrain in Southern Africa. Back in 2000, *LRM* Editor Dave Phillips joined one of these expeditions to the mountain kingdom of Lesotho, tackling the infamous Sani Pass in a convoy of three Series Is, including Sir Tinley.

Sir Tinley is a 107-inch wheelbase Station Wagon: one of a batch of Land Rovers built in 1957, and exported to South Africa. Originally used by a farmer in Natal, and later an adventurous lawyer for holiday transport to

Sir Tinley
sitting on the
dock of the bay





Lesotho and the Transkei coast, it was later bought by Peter Bassett from Pietermaritzburg, South Africa.

Peter and friends Louis Powell and Kevin De Klerk formed Conical Hat Expeditions, to explore and enjoy the rough tracks through the mountains of wild and unknown Lesotho. Sir Tinley had been upgraded to cope with this, using some Series III mechanical components. These included a 2.25 petrol engine, fully-synchromesh gearbox, Salisbury back axle and wider SIII front axle mounted on SIII springs. The gearbox power take-off drives an air compressor used for tyre inflation. There is an extra 50-litre petrol tank mounted under the front passenger seat, which doubles the range. Finally the capstan winch gives the driver a feeling of security in times of trouble.

Sadly Conical Hat Expeditions ceased operations after a few years and Sir Tinley was parked in Peter's garden. There she stood unused until he moved to Port Alfred on the Cape coast. Lack of storage space saw Sir Tinley parked in the open, exposed to coastal weather and corrosion and so Peter took the decision to sell the vehicle to anyone who'd look after her properly. John knew of Sir Tinley, having represented and promoted



“Bully Beef stew, a dish of which John was inordinately fond”

Conical Hat Expeditions at Land Rover and outdoor shows in England, and hearing the vehicle was for sale, did a deal with Peter. Sir Tinley was then stored in Eshowe, awaiting John's next visit to the South Africa for the next Old Trucks Babanango meeting to be held at Villiersdorp, in the Cape Province.

While Sir Tinley parked up, John had arranged for some maintenance to be done. The brakes were overhauled, new shackle pins and bushes installed and the wheel bearings and seals replaced. The worn old 7.50 x16 crossplies were replaced by 235x85x16 Cooper Discoverer STT radials mounted on wider SIIB Forward Control wheels.

Sir Tinley, was loaded with camping equipment, water containers, a jack, hand

Come Along winch, crank handle, tow rope, jerrycans, cans of oil, various spares, and tools and spanners of every size and configuration to fit the madness of Whitworth, Metric and AF nuts and bolts that kept Sir Tinley together. There was also food: mainly the raw material for Bully Beef stew, a dish of which John was inordinately fond, having much enjoyed the stuff while on a stint with the Rhodesian Army. There was also everything needed for a braai (BBQ) –another of John's great loves, and no born of a boyhood spent in the bush.

On November 17, 2014, Sir Tinley headed south, with John piloting his new love. I was with him, driving an Isuzu pick-up for delivery in Cape Town. It was a magnificent trek through the green valleys and mountains of





Kwa-Zulu Natal. At one stage we stopped next to each other and I commented on the magnificent view over the escarpment. Due to the noise of Sir Tinley, John had no idea what I'd just said. Sir Tinley had no padding or sound-deadening material anywhere, not on the roof, sides, or doors, and it took time to clear his hearing.

When filling up with petrol in Underberg, John noticed a large puddle of black oil on the paving at the garage. More oil was dripping from the bell housing. It seemed as if the rear main bearing oil seal had stopped doing what it was designed to do. With a shrug of his shoulders, John, well versed in the ways of Land Rover said: "Let's see what it does – we'll top her up as we go." And that's what we did.

The following day was a punishing 12-hour run to Port Alfred as John had a box of very precious Land Rover spares from John Craddock for an early 80 inch being built by Peter Basset.

After a cruise on the Kowie River the next morning, Sir Tinley headed on to Jeffreys Bay for the night to visit John's daughter, Sheena, who had a holiday job there, before returning to Mansfield. The following day was another long slog west along the N2 highway, a stop being made for lunch at a restaurant in the harbour at Mossel Bay, before continuing west into the afternoon and evening for many hours to the village of Greyton. Sir Tinley had hardly come to a halt at a restaurant for supper when there were people hammering on the doors with loud greetings and demands to know from where the vehicle had been stolen? Where had he come from? Did he know there was to be an Old Trucks Babanango gathering a few kilometres away? Which was of course exactly where John was headed.

This page:
Series Is (including
Sir Tinley, right) in
their element on
South Africa's
tracks and rivers

The fellows greeting John so effusively outside the restaurant were Richard Hess and Alistair Barnes, who not only own stables of modern Land Rovers, but also some tasty Series Is. Richard has a 1953 S I 80-inch with only 63,000 miles on the clock, which was once used by the *Evening Standard* newspaper to tow a mobile printing press (the press being powered by the Land Rover's PTO). Alistair has two Series Is: an unrestored pick-up originally from Kenya, resplendent in its original tilt, original grey paint and still sporting an EAK plate, as well as a lovely 88-inch, still in original beige.

John's wife had flown in to Cape Town and joined him for the Old Trucks Babanango meeting, being held in the Cape for the first time. Land Rovers were a bit thin on the ground, with John's 107, an ex-Dutch Army lightweight, and Richard Hess's 1953 80-inch representing the marque. There was also a beautifully restored FJ45 Land Cruiser, a Steyr Puch Haflinger that had to retire due to

fuel problems, and a raft of Jeeps – mainly restored CJ2As, plus an ex WWII MB, an ex SADF CJ6, and a CJ7.

The Kroonland 4x4 trail is set on farmland in the Wemmershoek Mountains. The trails alternate from straightforward to technical and challenging. Having had the Isuzu pick-up delivered in Cape Town, I joined the Sir Tinley crew. In spite of being quite heavily loaded with everything deemed necessary for survival in the southern latitudes of Africa, Sir Tinley, riding on its new Cooper STTs and pushed along by the 2.25 motor, was up to the more challenging trails. An Old Trucks quiz sheet was given to all vehicles so that passengers could keep themselves amused while drivers busied themselves with the trail. The day ended at the campsite nestled in a deep valley overhung by cliffs, high on the mountainside. All amenities were provided, with a canopied cooking area, ablutions and a very welcome plunge pool fed by a mountain stream. Very refreshing it was too. With his



YOUR BUCKET LIST

tent erected, John was soon busy at the braai.

After a slow start on Sunday the convoy of Old Trucks took to the trails once more, some taking on more difficult routes, others opting for the scenic route. By lunchtime all were back at the start and with answers to the quiz flying about, all departed, most opting for lunch at the Wynland Restaurant. Some time later that afternoon, Sir Tinley trundled back up one of the steeper trails to the camp.

With the meeting over John had a few days left to explore in Sir Tinley before flying home. First up was a trip through the Cederberg, a wonderfully wild area filled with high mountains, craggy rocks and rough tracks crossing little streams. The place is isolated and camp was made on the farm Nuwerust, a lovely site on the Matjies River. Here we were able to free ourselves from Sir Tinley's constant complaint and relax while John got a fire going to braai yet again.

This was the life: under the stars with the last orange light of day tinting the darkening night sky, meat sizzling and the smell of the bush. England, he said with a gloomy look, was always cold and overcast, and the neighbour peered over the garden hedge to complain about the smoke. There was no joy to be had there, he felt.

After allowing ourselves a stop at the village of Wuppertal it was time to head to the west coast. The village was established in 1830 when Rhenish missionaries began a mission station in the valley. The place is renowned for rooibos tea, tobacco and leather shoes.

Not too many people explore the west coast of South Africa, which is sad as there's a great 4x4 trail that follows the coastline. The Cape West Coast is not everyone's cup of tea as it is a desolate place. A freezing cold sea (as a result



150 MUST-DO EXPERIENCES IN SOUTHERN AFRICA

By Patrick Cruywagen

IF PLANNING a trip to Southern Africa then this is the book to buy. The author spent the best part of a

decade exploring the area in his Land Rover, uncovering some real gems along the way. Did you know you could sleep on an island just upstream from the Victoria Falls? Or drive your Land Rover along the old Hunters Road and have two tyres in Botswana and the other two in Zimbabwe while driving along the border fence? Best of all it contains loads of great 4x4 adventures. Purchase it on www.mapstudio.co.za or www.amazon.co.uk

of the Benguela Current sweeping up from the Antarctic) results in dry summers and cold wet winters – creating a desert-like environment. Lack of fresh water inhibits agriculture, resulting in a very low human population, with much of the coast totally deserted. Beyond the Olifants River, the only settlements found on the coast are the fishing harbour at Hondeklip Bay, the diamond mining settlements at Kleinsee and Alexander Bay, and the former copper loading and fishing harbour – now the marine diamond mining centre of Port Nolloth.

We followed old diamond mining tracks, camping wild next to the ocean. Very few people came along these tracks. Sir Tinley moaned along in four-wheel drive high box, its Cooper tyres now deflated to 1.0 bar, making light of thick sand. At times deep hollows and steep inclines of soft dry sand had Sir Tinley howling in second and third low ratio, but it

never faltered, and we never had to dig.

At one of our camps John lay under Sir Tinley with spanners pretending to do some maintenance (to avoid washing up dinner dishes) but found a number of nuts on the axle U bolts had worked loose. On closer inspection it was found that the threads on some were stripped. John made do with odd spares, not really satisfactory, but made the best of it, and they got us back to Cape Town.

The next day we headed further north, following more old mining tracks. Beyond odd seabirds and seals on distant rocks, we saw little wildlife. We could have carried on into Namibia, but eventually it was time to head south and back towards Cape Town, as John had a flight to catch.

With John back in England for Christmas, I booked Sir Tinley in to Pon Steyn Motors in Somerset West to have a few urgent jobs done.

The time had come for me to head back to Eshowe, 1000 miles away. I allowed myself a few stops to spend Christmas with mates along the way.

I arrived home in Zululand on New Year's Day. On the trip Sir Tinley covered 4882 kilometres, averaging about 70 km/h and thirstily giving six km/litre. Enough to make a strong man gasp. However, he was heavily loaded with all we needed in places where there were no facilities, and for a considerable part of the journey, carried four of us with our entire luggage over some very difficult country.

Sir Tinley never failed to instantly start no matter how cold or wet the morning –, and always stopped. He was firm and precise on the road with little slack in the steering. Uneven gravel, corrugations or loose sandy surface did little to him.



“Sir Tinley never failed to instantly start no matter how hot or cold or wet the morning – and always stopped”





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SNOW WONDER

**Want the North York
Moors National Park all to
yourself? Try going when
the weatherman advises
you to stay at home**

Story and pictures: Patrick Cruywagen

This was the second time I'd undertaken a laning trip on the North York Moors. Once again I was using the services of Yorkshire 4x4 Specialists guide Russell Dykes to show me the best lanes this popular National Park has to offer. It makes perfect sense to tap into the know-how of somebody who lives on the edge of the park. My question was simple. Show me lanes I haven't seen before, except for the iconic Rudland Rigg (because on my last visit we'd run out of sunlight and couldn't complete the whole of this scenic, long, must-drive lane). Also, as there was a bit of snow about and the best place to find even more is normally at the top of Rudland Rigg. All good North York Moors laning trips begin at the Cafe Stop in the village of Pickering. Not only do they serve a great cup of coffee and a decent breakfast, they are also reasonably priced, friendly and above all welcome Land Rover drivers.

The North York Moors is one of those areas





Above: xxxxx

you can never tire of visiting. Well I for one can't. Not only is the park home to the largest expanse of heather moorland in the UK, it's also home to friendly folk with a quirky (to my ears) accent, patchwork farming landscape, wonderful wildlife and uninhabited forests.

It's British countryside at its absolute best. As you make your way across the park you're almost sure to experience a strong sense of wide-open spaces – something hard to find in one's regular weekly working routine. Unless you're a ranger in the North York Moors National Park of course. In a nutshell it's a great place to escape to if you own a Land Rover and want to use it properly.

After shoveling down our breakfast it was time to take to the trails. Not before a quick drive past the famous Pickering Station, home to the popular North York Moors Railway. Seeing these magnificent old steam engines is like taking a step back in time. In fact the whole station looks the same as it did many years ago.

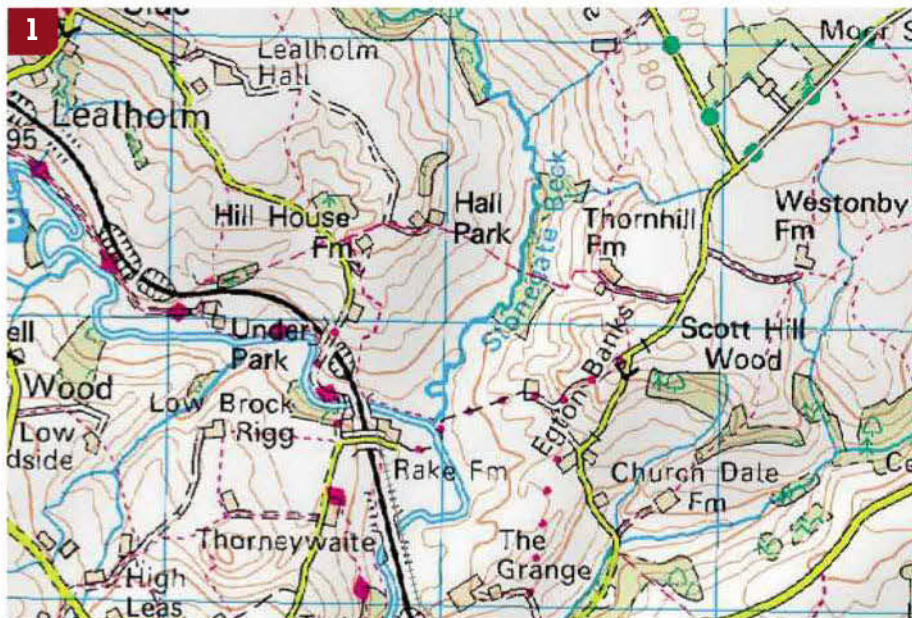
If you have the time, hop on to one of the old carriages and experience the power of steam as it sweeps you across the moors and on towards the seaside at Whitby – something I plan to do in the summer with the family.

Due to the expected inclement weather Russell had arranged for Rob O' Neill to join

us in his Td5 Defender 90, as it had a winch on the front, just in case things went totally pear shaped. I left my Discovery 2 at the coffee shop and jumped in with Russell in his newish Defender 110 with its four-cylinder 2.2 TDCi engine to propel us through the snow.

Today was not the worst day to be in a Defender with a decent heater. The reason I left my Disco behind was because I'd be taking pictures and making notes. Not easy to do when you're driving over tricky terrain. Hopefully my family will be able to make my next trip, so I can enjoy the off-road driving experience up here again.

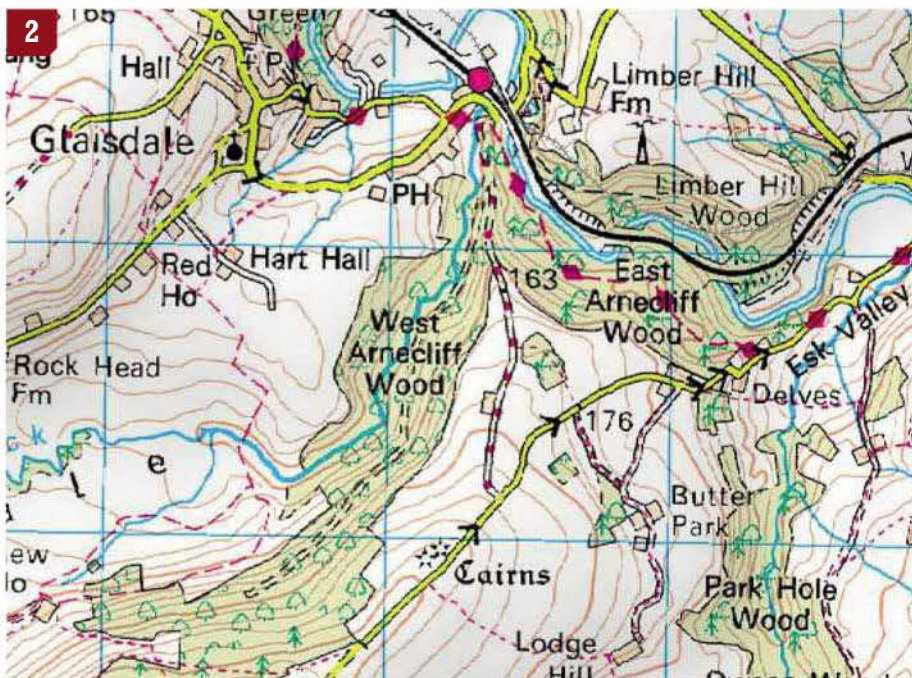
To get to our first lane which began just



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“A deranged rambler had placed a big boulder in the middle of the track”



to the north of Glaisdale, we had to take the scenic old Roman Road from Newton-on-Rawcliffe. According to my 1:50,000 map there used to be a Roman camp in the area. There's a lovely little farmhouse called West Banks at the start of the lane. It has a B&B and campsite, so if you're planning a laning weekend in the area, this might not be a bad place to spend the night. Not long in and we hit a rather slippery decline, with a rocky step or two that needed careful negotiation. I almost ended up on my backside trying to walk down the decline in a pair of wellies. Where I come from, Black Ice is an alcoholic drink. The rain was pelting down as I stood outside

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the Defender and watched Russell carefully make his way over the hard-to-spot ice. The rain and morning mist meant we couldn't enjoy the great views the lane normally offers. Hopefully this would change later on in the day. It seems as if each time I join Russell on a laning trip, the weather Gods conspire against us. Our two crossings of the River Esk passed without incident. It helps when the riverbed is rocky and the water not too deep. To get to the end of the lane after the second river crossing, we had to pass over an old railway bridge. Most of the lanes we'd be doing today are in the vicinity of this.

Our second lane began to the east of Glaisdale. It started with a rutted muddy climb with a few rocky steps to negotiate on the way up. We had to call a halt halfway, as some deranged rambler had placed a big boulder in the middle of the track. Russell used a tree trunk protector and a few recovery straps to cleverly pull it out of the way. This was a great rutted climb through one of the many forests that seem to be littered all over the Moors.

The ruts deepened and every now and then I could hear the Traction Control doing what it was designed to do. Two rocks at the end of the lane might have scraped the diff and so we popped out of the ruts and made our way around them.

Our third lane was along the Glaisdale Rigg; initially the track was wide and pretty easy to negotiate. Most of the puddles on it had frozen over and our tyres comfortably broke through the ice. My tracking skills confirmed that we were the first vehicle of the day on this lane. We passed through a small depression where we had to carefully choose our line before climbing back on to a ridge. This was followed by a sharp left turn before a long, gradual climb took us to the end. We had only





done three lanes and already we'd faced pretty varied terrain.

Our fourth lane took us towards Danby Beacon. To get there we had to cross that classical heather moorland I mentioned earlier. Some might call it boring and stark landscape: I call it Heaven on earth. As I climbed out of the Defender, the sideways sleet slammed into my face. The wind was pumping; this was Mother Nature dishing up the worst weather possible. Our Defenders stood firm as they slowly crawled across the wide-open plains.

It started to snow and soon we arrived at Danby Beacon, which dates back to the 1600s when it formed part of a row of beacons placed 20 or so miles apart. Whenever a foreign fleet was spotted a soldier would light the beacon as a warning that trouble was on the way. More recently the site was home to famous radar stations during the Second World War, providing early warnings of the approaching Luftwaffe planes.

As we stop at the Beacon, no one climbs out of the Land Rovers, as the conditions are now rather dire. Russell comments how the wind always seems be blowing here. Pity the poor soldiers who had to man the beacon and radar stations over the centuries? I hope they had decent warm jackets.

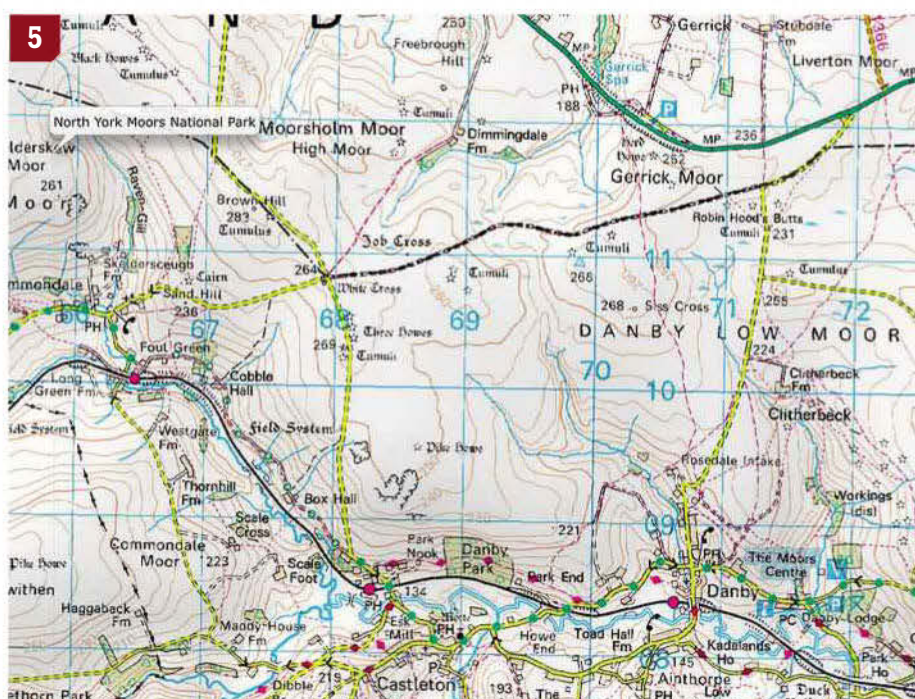
So on to our fifth lane, which is a long one – easily the longest of the day so far – just to the south of Guisborough. The weather has contributed to the creation of two standing water crossings on the lane, a great chance to get the Defenders wet. Both crossings are filled with massive slabs of ice. The lane is

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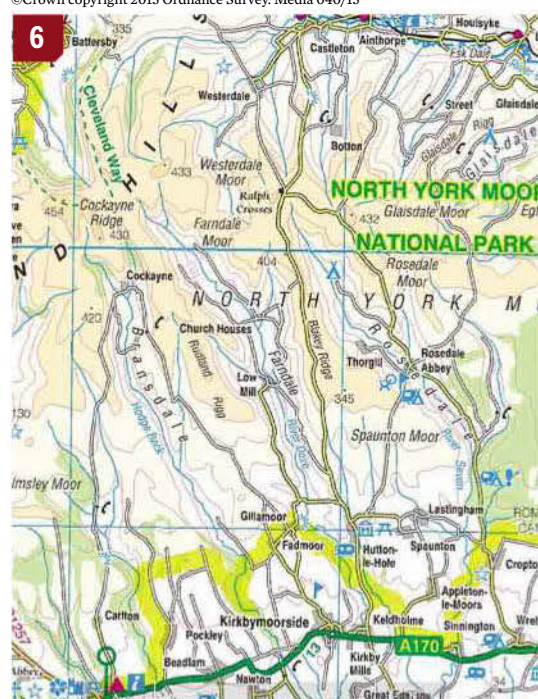


“I almost ended up on my backside...”



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initially pretty flat, but there are short sections where it dips down before rising up again. Sadly there are signs of off piste driving all around us. This lane finishes at White Cross, which is just north of Castleton. Now forgive me, but I'm going to share a useless piece of information with you about the crossing at the end of the lane, or rather the lonely concrete bus shelter plonked there.

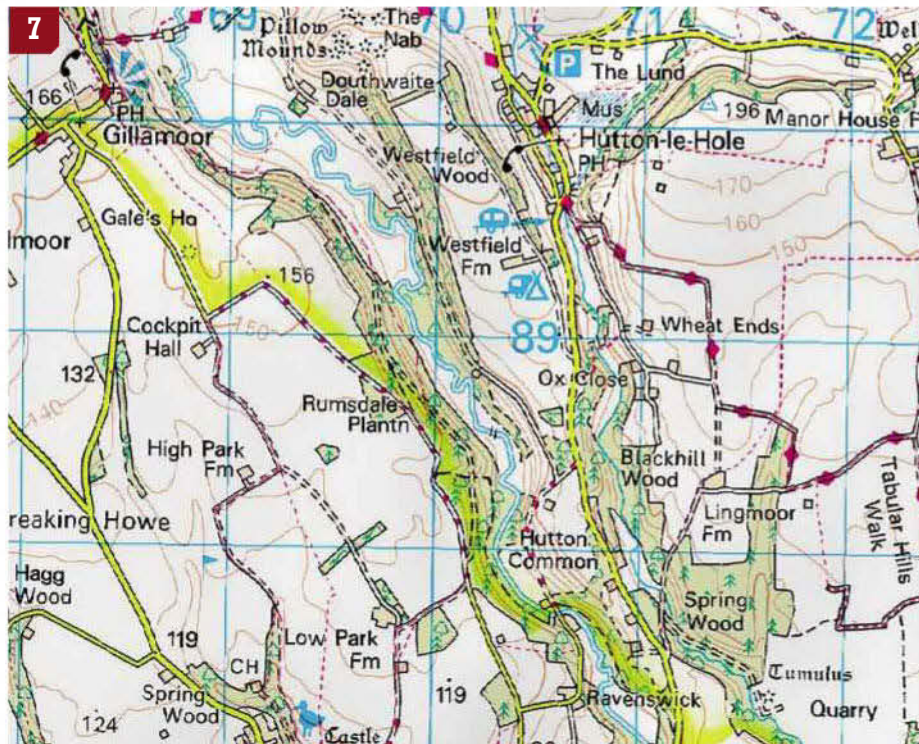
You can't miss it, as about a year ago some wag painted Shaun the Sheep on to it. According to the BBC News Magazine this is one of the loneliest bus stops in the UK. You can see why, because the nearest houses are on the other side of the dale. Who took the crazy decision to put a bus stop here? The number 26 bus chugs past every other Thursday and on a very rare occasion a tired walker might take the bus from here. It's definitely worth a stop and a snap (or just to be on your own!).

Up next was the lane I'd been looking forward to all day, the Rudland Rigg, as I still had unfinished business to attend to on this one. We tried to approach it from the north via the Battersby Plantation, but the steepness of the climb and the black ice made this impossible.

We probably could have used the winch to get ourselves up, but there was also the risk of sliding down the hillside. We next tried to enter the lane from the east, but once again Mother Nature worked against us. Maybe if we'd had snow chains, we might have made it up using this approach. Eventually we had to approach it from the south, as the climb is much gentler from there. This time we made it up to the ridgeline. Due to its elevation



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**“No wonder I call this place
Heaven on Earth”**

there was far more snow up here than we'd experienced during the rest of the day. We hadn't seen anyone else out all day, which was probably due to the terrible conditions. But that all changed at the top of the Rigg; a group of youngsters in a Discovery 1 with a lift kit were making their own tracks. Russell stopped them and explained that what they were doing was illegal. Soon they moved on along the legal track and we found ourselves alone once again.

This is what I imagine places such as Siberia or Alaska to look like. To me this is what laning is all about; we literally had the whole of the North York Moors to ourselves the whole day. How brilliant is that?

On the way back to Pickering we managed to take in a seventh and final lane. It was nowhere near as dramatic as the one we'd just driven. It was full of potholes and a few friendly walkers, but we were able to stay in high range for all of it.

About halfway along, a few pheasants scurried out of our way. They looked nervous, which was natural as this was the last day of the hunting season. Hopefully they'd see the sunset, because then they were safe for another year. We had one final river crossing near the village of Hutton-le-Hole.

What an incredible day it had been, thanks to my great guide and his deputy in the recovery vehicle. While most people were in the pub or slouching on their couches, we had taken a chance and headed out into the North York Moors National Park on what can only be described as a day with challenging weather.

What a great decision that turned out to be!





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63 PLATE DEFENDER 90 COUNTY 2.2 TDCI XS in Orkney Grey metallic with Black roof and spats, Black 1/2 leather interior, Boost alloys, Air conditioning, Heated screen, XS Side steps, Leather steering wheel, SVX style grill and additional spot lights in headlight surrounds, Load area soundproofed, Stunning condition, as new only 4000 miles **£25,995**



DEFENDER 90 TD5 COUNTY VAN in Orkney Grey metallic with contrasting Black roof and interior. This vehicle has just undergone a full nut and bolt re-build onto a new Galv chassis, All new suspension and bushes, New boost alloys and All Terrain tyres, Privacy glass, Late style TD5 dashboard, Tow pack, Fully serviced, Stunning vehicle **£14,995**



62 PLATE DEFENDER 110 2.2 TDCI in Zermatt Silver Metallic with contrasting custom made Beige quilted leather interior, 15,000 miles, 1 Owner, Overland storage system in rear, Genuine snorkel, Just had a major service, Fully Waxoyled, Stunning condition and spec **£21,750 + VAT**



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2003 DISCOVERY TD5 MANUAL in Epsom Green with contrasting interior, Just converted to Off Road spec using all new parts, +2 suspension lift, Snorkel, Heavy duty shocks, 265 Mud Terrains on Black mods, Steering guard, Roof light bar, Hi/low conversion, Fully serviced, 12 Months MOT, Fully Waxoyled, Great winter vehicle **£7,995**



52 PLATE DISCOVERY TD5 MANUAL in Alveston Red metallic with contrasting interior, Just converted to Off Road spec using all new parts, +2 suspension lift, Snorkel, Heavy duty shocks, 265 Mud Terrains on Black mods, Steering guard, Roof light bar, Hi/low conversion, Fully serviced, 12 Months MOT, Fully Waxoyled, Great winter vehicle **£7,995**



2001 DISCOVERY TD5 ADVENTURER PICKUP in Vienna Green Metallic, This vehicle has just been converted to a new tray back, All new suspension, Self levelling rear, new wheels/tyres, full service, 12 Months MOT, Waxoyled **£7,995.00**



2000 DISCOVERY 4.0L AUTO LPG CONVERTED in Alveston Red metallic with contrasting Grey interior, 64,000 miles, Twin factory fitted sunroofs, 20" Stormer alloy wheels, Sport side vents, Stainless steel side tubes, just had major service inc 12 Months MOT, Fully Waxoyled **£8,995**



2005 RANGE ROVER SPORT V8 SUPERCHARGED PETROL AUTOMATIC in Carns Blue Metallic with contrasting Black interior, Heated Seats, Rhodium Dash Finish, 22" Alloy Wheels + Tyres, Privacy Glass, Air Con, 6 Disc CD Harmon Cardon Entertainment System, Just Serviced, 12 Months MOT, Outstanding Condition Excellent Performance **£14,995**



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55 PLATE DISCOVERY 3 TDV6 SPORT EDITION in Alveston Red metallic with contrasting Charcoal interior, Supercharged grill and alloys, Stainless steel side steps, 58,000 miles, Service history, Just had a major service inc 12 Months MOT, Stunning conditions and looks **£13,995**



55 PLATE DISCOVERY 3 TDV6 SPORT EDITION in Alveston Red metallic with contrasting Charcoal interior, Supercharged grill and alloys, Stainless steel side steps, 58,000 miles, Service history, Just had a major service inc 12 Months MOT, Stunning conditions and looks **£13,995**

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Defender and Discovery roof mounted light bar **£79.95**

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Black air con **£119.94**

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Cranked rear radius arms **£138.00**

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Discovery 1 Chevron Tread **£192.00**

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Freelander 1 Stainless Steel **£210.00**

Freelander 2 Black & alloy **£450.00**

Freelander 2 Black tubes **£396.00**

Freelander 2 Stainless tubes **£474.00**

DEFENDER STEPS

90 Tomb Raider style steps **£204.00**

110 Tomb Raider style steps **£240.00**

90 Basket style side steps **£210.00**

110 Basket style steps **£220.00**

90 Stainless steel side tubes **£234.00**

110 Stainless steel side tubes **£264.00**

Single folding side step **£40.80**

Single folding rear step **£40.80**

NAS spec style rear bumper step **£320.00**

RANGE ROVER STEPS

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P38 Oasis pattern **£240.00**

Sport Chrome & Black **£354.00**

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L322 Black side tubes **£282.00**

L322 Black rubber topped **£414.00**

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Twin rear step fits on to tow bar - will fit all models

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Black coated **£27.07**

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Window grills

- Side sliding **£102.07**

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Hi Lift Mate **£38.40**

Off road base **£48.00**

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Off road kit - Advanced **£108.72**

Terrafirma winch bumpers from **£354.00**

SUSPENSION

Terrafirma +2" lift kit from **£234.00**

Parabolic springs SWB **£354.00**

Parabolic springs LWB **£390.00**

P38 Coil conversion **£420.00**

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Range Rover Classic coil conversion **£270.00**

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ECU Downloads from **£450.00**

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Seating and others available - please call for details

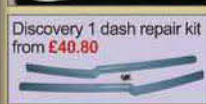
FREELANDER / DISCOVERY INTERIOR



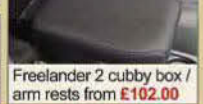
Discovery 1 / II roller blinds from **£122.00**



Freelander 1 armrest from **£84.00**



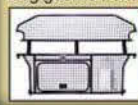
Discovery 1 dash repair kit from **£40.80**



Freelander 2 cubby box / arm rests from **£102.00**

UNIVERSAL INTERIOR ACCESSORIES

Seat covers front from **£45.00**
Seat covers rear from **£30.00**
Rubber front floor mats from **£45.00**
Rear rubber floor liners from **£69.95**
Land meter **£20.38**
Dog guards from **£71.94**



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Wheel bearing kits from **£31.19**



Swivel housing kits from **£78.00**



Service kits from **£14.95**



Swivel pin kits from **£49.99**



Defender replacement hinge kits **£42.00**

ALLOY WHEELS

20" Auto-biography Alloys **£180.00**

20" Stormer Alloys **£174.00**

18" Hurricane Alloy **£162.00**

20" New style Stormer **£180.00**

Boss off road wheels 16" **£156.00**

Zu Rims from **£156.00**

ALLOY WHEELS

16" Boost wheels (new) **£102.00**
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16" Tornado wheels (new) **£96.00**
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** Refurbished wheels are sold on an exchange basis, surcharges will apply**



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1) 16" Wolf rims Black **£69.00**
2) 16" Wolf rims White **£60.00**
-take off
3) 16" Black Modular **£45.00**
4) 16" Silver Modular **£45.00**
5) 16" White 8 Spoke **£45.00**
6) 16" Series / Defender / RRC refurbished
Exchange wheels from **£44.95**



TYRES

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Insaturo Special track from **£90.00**
General Grabber AT2 from **£132.00**
BF Goodrich AT from **£126.00**
Insaturo Sahara from **£89.40**
General Grabber UHP from **£93.60**
Insa turbo AT from **£89.95**
Insa turbo MT from **£90.00**
Goodyear Wrangler MTR 235/85 x16 **£132.00**

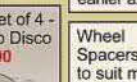
Other tyres available please call for details.

SPACERS & ADAPTORS

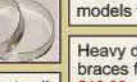
Hub nut spanner **£8.34**



Spigot rings - Set of 4 - late wheels on to Disco 2 and P38 **£60.00**



Locking wheel nuts all models from **£40.80**



Hub Adaptors to enable fitment of Disco II and P38 wheels onto your earlier axles **£390.00**

Wheel Spacers to suit most models from **£192.00**

Heavy duty wheel braces from **£10.38**

Freelander wheel shims **£59.95**

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Service kits all models from **£15.00**
Bulkhead repair panels **£40.80 pr**
Wind and rain Deflectors
Fronts from **£40.80** all models
Rears from **£36.00** all models



RECONDITIONED TRANSMISSION

Series Gearbox from **£595.00***
LT77 Gearbox **£570.00***
Freelander from **£522.00***
R380 Gearbox Disco / Def **£660.00***
R380 Range Rover P38 **£720.00***
Transfer boxes Def / RR / Disco from **£595.00***
Differentials all models from **£234.00***
Clutch kits from **£79.95**
NEW Prop shafts all models from **£58.75**
ALL UNITS SOLD ON AN EXCHANGE BASIS



AXLES

Disco / RR / Def fronts from **£895.00**
Rears from **£695.00**
Recon Axle casings from **£375.00**



NEW Defender front Axle ABS or non ABS Complete assy **£1378.71**
Recon steering boxes from **£150.00**
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FREELANDER RUNNING GEAR

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IRD Unit reconditioned **£780.00***



Rear Differential **£372.00***

Viscous Coupling **£450.00***
Front Prop section **£264.00**
Rear Prop section **£180.00**



ALL UNITS SOLD ON AN EXCHANGE BASIS

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16x7 TFX DEF/ D1/RR in Silver, Gun metal Grey or Black **£159.99**



16x7 Dakar DEF/ D1&2/ RRC & P38 Black or silver from **£162.00**

6x7 RVS D2/ P38 in Black or Anthracite **£160.00**



16x7 RVS DEF/ D1/ RRC in Black or Anthracite **£150.00**

Bead lock rings and bolt kit set of 4 **£450.00**



16x7 Offender DEF/ D1/RR **£132.00**

TERRAFIMA ACCESSORIES

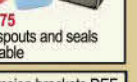
Defender Cruise control kits basic or factory fit from **£168.00**



Bulkhead removal bar for extra room **£155.94**



Jerry cans in a range of sizes and colours from **£22.75**
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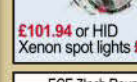


Seat extension brackets DEF **£54.00**

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TerraFima 8" Halogen spot lights **£101.94** or HID Xenon spot lights **£190.74**

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SERIES I SAVED

Land Rover steps in to reunite
friends with the Land Rover
they couldn't afford to keep

Images: Land Rover New Zealand



“We couldn't turn down the opportunity to help these four spirited friends”



Four dedicated Land Rover fans were heartbroken when they were forced to sell their 1957 Series I through lack of funds.

The university friends from New Zealand had listed their beaten and broken 1957 Series I Land Rover, christened ‘The Landy’, for sale on an auction site, following 15 years of ownership. The listing told the story of their many adventures and their sorrow at parting with their beloved Land Rover.

While Will Radford, Jeremy Wells, Anthony Dawson and James Shatwell thought they were closing a chapter with the sale, fate intervened when the team at Land Rover New Zealand read the ad and hatched a covert operation with Will's wife, Claire, to give ‘The Landy’ a painstaking ground-up mechanical restoration.

Fittingly, the four friends were reunited with their lost love on St Valentine's Day by Land Rover New Zealand.

“When we came across the auction listing on the TradeMe website, we loved the story behind the classic vehicle,” said Land Rover New Zealand Marketing Manager, James McKee.

“A heart-warming tale accompanied the listing, documenting the many journeys and stories this Land Rover had been part of and showing just how much

the vehicle meant to the four guys.

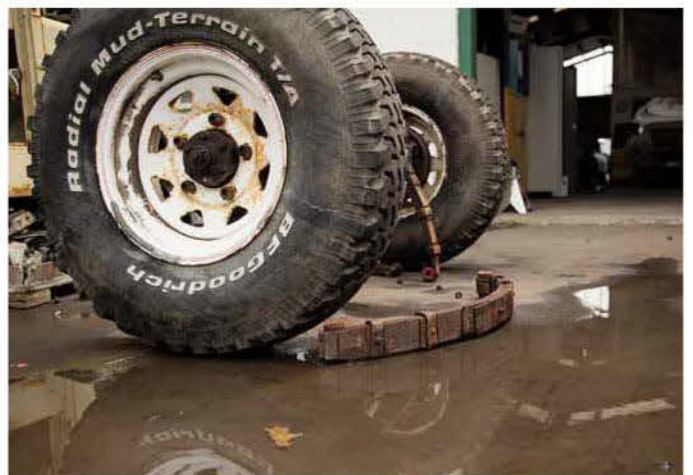
“We decided it was an amazing opportunity to help them continue their relationship with this classic vehicle, so we bought it and restored it back to its former glory – replacing the broken bits with genuine Land Rover parts, while retaining some of the dents, dings and even the bumper stickers that made it theirs and gave it its charm. Now they can enjoy it again for many years to come.”

Following the restoration ‘The Landy’ was taken on a whistle-stop tour of New Zealand's South Island to relive some of the original adventures Will Radford showcased in his TradeMe listing, before returning to Auckland just in time for Will's wife Claire to hide it in the shed, ready to unveil it on February 14 to the four unsuspecting friends.

The Valentine's Day project was part of a historic year for Land Rover, as it celebrates the final year of production at Solihull of the current Defender model, the direct descendent of the Series I Land Rover.

“This is a remarkable story,” said Robin Colgan, Land Rover Global Brand Director. “Adventure is a core part of the Land Rover brand, so the opportunity to breathe new life into a Series I to help these four spirited friends to keep exploring was something that we couldn't turn down.”

Above & opposite page: ‘The Landy’ has already explored most of New Zealand's South Island. After a full restoration, it's now ready to revisit those old haunts





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The Otokar-built Special Operations vehicles go on parade in Nicosia

Words and Photographs: Bob Morrison



12.7mm heavy machine
gun variant – note the
mortar barrel on wing





Otokar-built Special Operations Vehicles with 30mm automatic grenade launcher main armament – essentially almost identical to the US Rangers R-SOV they have minor build changes and different armament

THE PRIMARY focus of my military Land Rover feature this month, the Otokar-produced Defender 110 R-SOV, has its roots in the 1991 Gulf War to liberate Kuwait from the clutches of Saddam Hussein, and the impressive performance of the One-Ten DPV (Desert Patrol Vehicle) used deep behind enemy lines in Iraq by SAS (Special Air Service) patrols to deter Scud missile attacks on Israel. The secondary Land Rover variant in focus, the Otokar Defender 90 Gunship, has its origins much earlier, being an evolution of the Greek Cypriot conversion on the Series IIa 88" Lightweight chassis (see January 2009 issue) used to carry the M40 106mm recoilless rifle.

Although I had seen the odd picture of the Turkish-built Special Operations Vehicle – technically the R-prefix should only be used for the original US Army vehicle used by the elite 75th Ranger Regiment – I was by no means certain that any were still in use in the Turkish Republic of North Cyprus (TRNC). It was therefore a thrill to see not only a dozen of these rare vehicles following the lead Land Rovers in the vehicular section of the 2014 Republic Day parade through Lefkosa, as the Turkish Cypriots call Nicosia, but to see three different primary armament configurations.

The appearance of Gunship 90 variant, on the other hand, was not quite so unexpected as during my March 2014 trip out to Cyprus

to cover the 50th anniversary of UNFICYP (United Nations Force In Cyprus) I spotted three examples. On an afternoon off from photographing the Blue Berets, I explored the southern half of the divided capital city and discovered, purely by chance, that from one particular vantage point it was actually possible to look into the parade ground of a TRNC Security Forces Command (Güvenlik Kuvvetleri Komutanlığı or GüvKK) barracks and see a line-up of graged Land Rovers.

The Otokar SOV is essentially very similar to the version used by the US Rangers and, for that matter, the Solihull prototype demonstrator – but the Turkish vehicle has an extra tubular stiffener running from the radiator brush guard back to the middle cross-member position where the JATE ring is attached. If you think you have seen something like this before you are correct, as the long range patrol version of the Perentie 6x6 used by the Australian SASR (Special Air Service Regiment) has looked fairly similar since its first public appearance in 1990.

Just like the majority of their American R-SOV cousins, the first four SOVs in the Lefkosa parade featured 12.7mm heavy machineguns, referred to as the .50cal if using imperial measurements, as their primary armament on a pintle in the ring mount attached to the top of the rear



- 1: Note safety belt instead of door and raised commander's seat
- 2: Defender 90 crew is three - vehicle driver, gunner and commander/loader



Rear view of 12.7mm HMG version – note platform under gunner



- 3 Russian 30mm grenade launcher – handle below locks turret ring
- 4 Solihull prototype photographed in 1990 – only the lights are different

compartment roll-cage. The SOV third crew member (gunner) sits on a strap seat hanging from the ball-race turret ring and stands on a platform over the cargo bed and between the wheelboxes, using his feet to rotate his weapon in fighting mode.

Secondary armament for all Otokar SOV variants is a licence-built 7.62mm Rheinmetall MG 3 machinegun, fitted on a pintle mount on the dashboard in front of the vehicle commander, who sits on a raised seat, giving him a better field of fire. Ranger vehicle commanders, on the other hand, are armed with the 7.62mm M240 – a version of the Belgian FN MAG known as the GPMG in British service. The Turkish vehicles have two rifle clips under the front roll-cage strut and a third on the driver's rear door post in which the crew's 7.62mm G3A7 assault rifles are securely stowed.

As if all this isn't enough firepower on a three-man vehicle, both the heavy machinegun and grenade launcher vehicles also carry a 60mm mortar on the left front wing; if operationally deployed, the mortar base plate would normally be stowed on the rear load bed, with mortar rounds kept in the baskets on the front wings. Some SOVs in the parade also sported an RPG in racks across the rear legs of the roll cage and main armament ammunition boxes racked on either one or both sides over the wheelboxes.

The second batch of four SOVs in the parade

HISTORY

THE US RANGERS Special Operations Vehicle, upon which the Otokar SOV was based, was produced by Land Rover to meet a specific requirement of the US 75th Ranger Regiment, using the Defender 110 Station Wagon as a base vehicle.

The reason – in 1991 it was the only five-door Defender body style in production.

The Rangers wanted a lightweight and heli-portable fast response vehicle similar to the SAS 110 DPV, but also had a specific need to carry up to seven troops – two up front, one each side, and two at the rear, plus a top gunner to provide fire support.

A ring mount, similar to that on the much larger and heavier HMMWV or Hum-vee, was fitted to the roll cage for the primary weapon to be mounted on.

For those interested in reading more about the R-SOV, we published features on it in the November 1999 and February 2000 issues of *LRM*; in the second article using images of in-service vehicles shot by US photojournalist Joel Paskauskas.

Defender 90 with missile launcher – note the split windscreen



“Its crew could kill a main battle tank four kilometres away”

DECLASSIFIED



THE PROTOTYPE

IN MAY 1992 Land Rover and its then owner British Aerospace, in co-operation with the UK Defence Export Sales Organisation, laid on a demonstration at Eastnor Castle for a military delegation from a potential Far East client. Several One-Ten and Defender variants were presented, along with armaments ranging from rifles to mortars by Heckler & Koch and Royal Ordnance, which were also owned by British Aerospace at that time. Solihull's Government & Military Sales Department invited me to the demo and allowed me to take the fully armed R-SOV demonstrator to Eastnor quarry for photos.

had Soviet-designed 30mm AGS-17 Playma automatic grenade launchers as primary armament. Also manufactured by China and Serbia, this weapon has a 29-round drum magazine and can punch out grenades accurately to 800 metres or to twice this range when used as an area suppression weapon. This is not quite as awesome as the 40mm LAGL carried by UK Forces R-WMIKs, but as the weapon is half the weight, its crew can quite easily demount it and carry it with them.

The most powerful weapon on show in the parade aboard the Otokar 110 Defenders however, was the AT-5 Spandrel anti-armour missile launcher carried by the third group of four. The warhead of the optically-tracked wire-guided Spandrel, known as Konkurs by its Soviet designers, could allow its Land Rover-borne crew to kill a main battle tank up to four kilometres away.

Further back in the parade, just behind the Akrep armoured cars which I'll cover next month, came the only two TRNC military Defender 90 variants I've seen outside of barracks. These short wheelbase Land Rovers were also armour-hunting gunships, but rather than AT-5 missile launchers they carried M40 106mm recoilless rifles.

The recoilless rifle may well be old technology, designed around the same time as the Series One Land Rover, but it's still a

very potent weapon against light armoured vehicles, trucks and emplacements.

I first photographed a similar vehicle, one of Solihull's Government & Military Operations Dept demonstrator fleet at Long Valley just after the 1990 British Army Equipment Exhibition held next door at Rushmoor. Having delved back into my photo archives and located a detail shot I took of the fighting compartment, I am beginning to wonder if this “project for an undisclosed customer” might actually have been the prototype for the Otokar gunship as, apart from the light clusters, the details are remarkably similar.

This type of light gunship Land Rover conversion may seem to be a blast from the past, but it can actually be a very potent and highly manoeuvrable armour killer. During the US Marine Corps dash into Baghdad in 2003, real-time footage was screened of an American vehicle which had been disabled and forced to a halt by a brave Iraqi Army anti-tank team. The weapon which disabled the tank was a 106mm recoilless rifle mounted on a Lightweight Land Rover. I know because my good friend, the late Yves Debay, photographed both target and assailant vehicles while they were still smouldering on and beside the highway.

Next month, in my concluding report on Turkish North Cyprus military Land Rovers, I will focus on the Otokar Akrep.

LRM



Above; showing the Elite in the very popular Diamond XS trim option.

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Right; showing the Elite in Tartan Stitch.

Right; Showing the Tartan Stitch option. High grade Automotive Nappa Leatherette and perforated panels with black, red, green & contrasting white stitch.

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Right; showing the Exmoor Evander Wood Rim 15" steering wheel with 36, 48 Spline or 2015 Defender Boss.

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ENABLING THE DISABLED

Being disabled does not mean
the end of all country pursuits,
especially if you own a Defender

Words & photographs: Tony Scott



Perthshire is big tree country, with the highland boundary fault line dividing the rich, rolling fields of grain from the sub-Arctic climate of the large mountain ranges. At the core of this county is the River Tay, Scotland's longest, where ordinary Scottish folk come to enjoy extraordinary fishing experiences. We all know that wherever people enjoy country pursuits, you will find Land Rovers, right from the earliest classic models to the latest £100,000-plus models.

Now that the UK-based production of the Defender 90 and 110 as we know it is coming to an end, some of us are rightfully worried. This includes part time ghillie and countryman Charlie MacDonald, who, due to his disability, needs a little help when he wants to get to the mountain, moorland or riverbank. This is where a 110 is a brilliant choice, with a wide range of modifications and extras available to enhance its already legendary off-road abilities when the going gets tough.

Charlie explains why his immaculately-prepared two-year-old Defender is so important to him: "I use it to get access to fields and river banks which would not be possible on foot because of my disability. Now that we know that they will stop making them in their current form in the UK, those of us who need and use them for real off-road work

should be very concerned. It's important to highlight this issue to those with disabilities, as currently the Defender is their best option."

Charlie was born with Larsen Syndrome, a rare bone disorder that causes shallowing of the joints. It gave him two dislocated hips and a whole heap of pain and years in hospital as a young boy. It was during his days in hospital that he decided that nothing would stop him living as full a life as possible, and that's exactly what he's done despite his ability, thanks to his Defender. His disability means he has to draw on inner reserves of strength and confidence when the unexpected happens. Charlie explains: "I dislocated my good hip again and spent over four years on crutches as a result. While that was going on, a mate from Melton Mowbray asked me to take over the shooting on a local farm when he had to go back down south, so I thought: how on earth am I going to get into the fields? But the doctors surprised me with a new ceramic hip, and eight weeks after the operation, I was back driving a Land Rover. When pigeon shooting I used camouflaged crutches that fitted perfectly into the Defender's rear load space. The Land Rover is a super vehicle for getting to any type of shooting or fishing in any weather, plus it carries everything I need."

Target shooting helps Charlie keep his eye in. He is a member of the rifle club at



Above and below: Charlie uses his Defender 110 (Swampy) and camouflaged crutches to get around while engaging in country pursuits, including shooting



Blairgowrie, and was lucky enough to take part in the Scottish lightweight sporting rifle event. In his first year he got the bronze, then the following year silver, so he went for the gold and got it the following year.

Before his Defender, Charlie used a Discovery 1 as a short-term solution but it was not the most reliable so he walked into the main dealer in Perth, crutches and all, and bought the Defender.

"When asked if I had one in mind, I said: 'A seven-seater 2.2 top-of-the-range station wagon and the wee bairn will pick the colour'. My daughter Chloe chose Galway Green. When I went back to collect it, I asked for a snorkel and roof rack – you can't have a Defender without a snorkel.

"The wife said: 'Why the snorkel?' and I replied that I might go scuba diving! The kids love their Land Rover, and named it Swampy after a TV series, as they reckon their Dad could catch alligators with it! Chloe is in charge of cleaning the wheels, while David, who is younger, does the mudflaps and steps, as I can't get down to them."

Since purchasing his most prized possession Charlie has spent a bob or two getting it ready for country pursuits and making it more disabled driver friendly. In fact he reckons that so far he has invested £40,000 in his Defender. It has an electrically-controlled

central floodlight that makes life a bit easier for Charlie when out at night shooting foxes.

He's also added several other ideas of his own. The roofrack has been modified for ladders and fishing equipment and he's fitted a host of extras from tried and tested off-road gear suppliers such as Land Rover Pentland, TerraFirma, Frogs Island and All Four Wheels.

What about when things go wrong out in the wilds?

"I also have a full survival kit in it as it can be dangerous at the side of the road, say if you're dispatching an animal. Also, the winters can be cold and it's very reassuring to know that you have survival gear in the cabin with you," explains Charlie.

When the topic turns to fishing, Charlie gets a twinkle in his eye. "I've fished all my life, and Swampy helps me to keep on living the dream. I did a lot of trout fishing, then helped out as a ghillie on the Tay, then later on I got involved with the local angling club."

Charlie has been a pioneer for disabled access in the countryside and he was involved in the disabled access control point at Loch Dunmore near Pitlochry. Before that he worked with the Forestry Commission on a disabled access walk project to a coarse fishing loch to make it even more inclusive.

The reason why he chose a Defender is that he can get into it more easily than any other



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- Self-made fishing rod holders
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- Cruise control
- Dog guard
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- Jump start points



4x4, due to the flatness of the seats and the height. He has further modified the seats with risers lifting them another 2.5 inches. As there is not a lot of wriggle space in a Defender he used a TerraFirma kit to move the seat further back. Land Rover Pentland in Perth have been extremely helpful to Charlie and his needs and have gone out of their way to find and fit whatever he needed.

The local agricultural engineers, the Wilks Brothers, have also been a fantastic help, and let Charlie use their big ramp to reapply Waxoyl to the chassis. For now his biggest concern is that Land Rover will leave him high and dry without UK-made Defenders. "If I'm stuck up the hill with a broken leg or other injury, I want the mountain rescue to come for me in a Defender, not some fancy 4x4. As a kid I used to draw Land Rovers that were very

basic, but this Defender meets all my off-road needs. I've got an older SWB Series III as my next project, to bring it back to a useful life."

As we drove down to the fishings at Murthly estate, I thought about the life and times of Charlie MacDonald and his adapted Land Rover. Both of them, I reflect, are definitely fit for country pursuits.

THANKS TO

THANKS TO Thomas Fotheringham for allowing us to use the picturesque Murthly Estate, www.murthly-estate.com, where guests can enjoy a wide range of fine country pursuits.

Above: Charlie's special equipment in the rear of the Defender; with his much-modified Swampy

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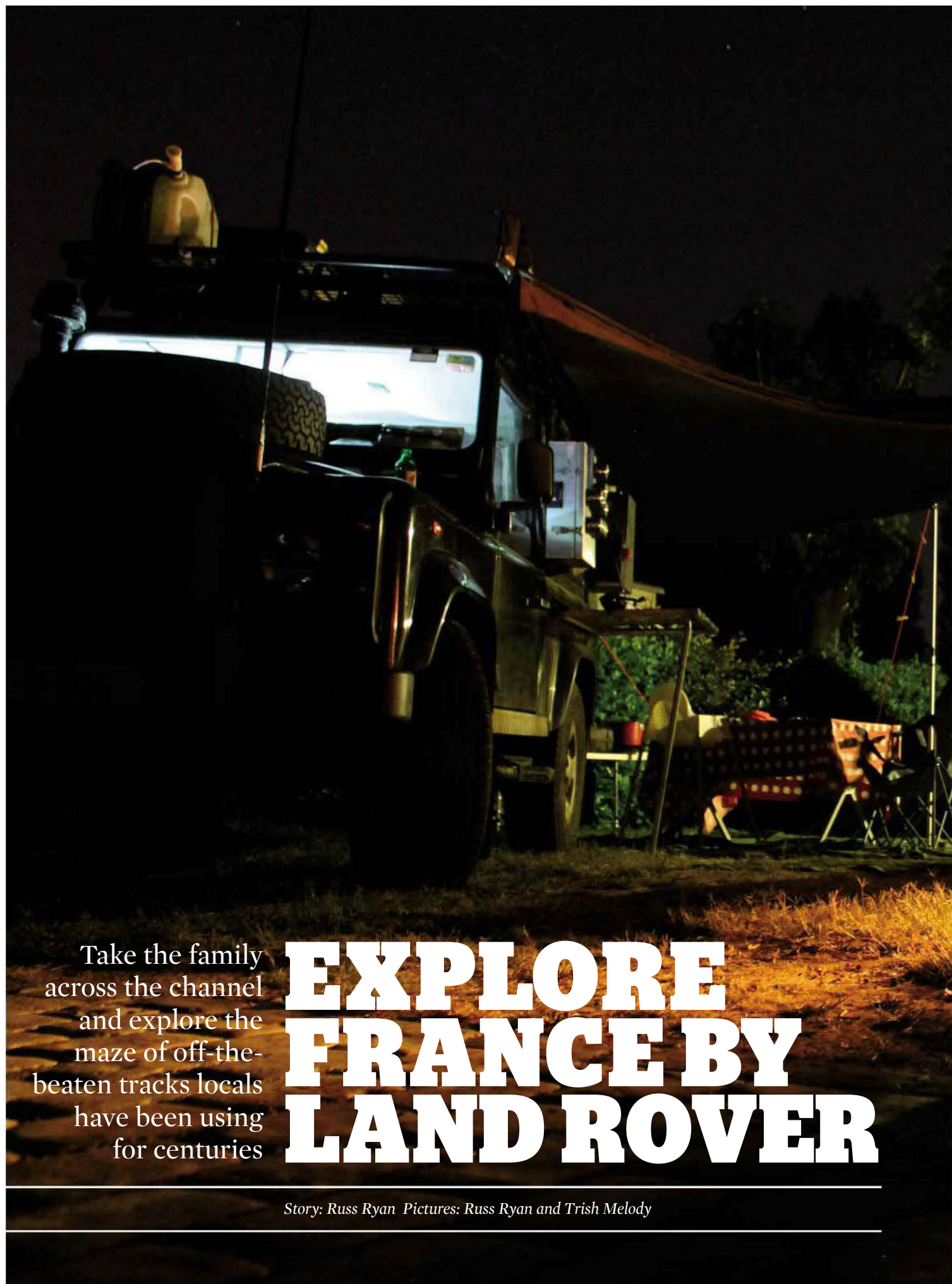
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Story: Russ Ryan Pictures: Russ Ryan and Trish Melody





Left:
Sights ranged from
quaint local dress
to WWII exhibits



STAYING THERE

WHEN seeking campsites in France the simplest guide is to follow the campsite rating stars as this will give you a good indicator of the type of facilities available.

For example one star campsites are pretty small with limited amenities. Prices can be variable starting from about eight Euros per night for a pitch.

Two star campsites: over 4000 such campsites nationally often have individual shower cubicles with hot water, individual wash basins and power points for small electrical equipment items.

Three-star campsites also have children's play areas; prices normally range between 32 - 40 Euros per night for up to four people.

Four-star campsites also have larger pitches with many of them having a bar and restaurant on site; other amenities include games and common rooms. Depending on the location and the time of year, prices tend to vary from 20 a day off season to between 40 and 50 a day during peak season.

You can also camp on farms and vineyards, simply called "Camping à la ferme", they normally offer small areas for camping and also provide basic amenities.

There is great confusion as to the legality or illegality of camping in the wild. Use common sense.



The sheer physical diversity of the French countryside will leave you wanting to return and further explore the many tracks that open up the remote parts of this beautiful country. 4WD tracks in France range from inland coastal tracks in the south, to the hills of Provence and the ascending hill routes found in the Alps. Perhaps one of the most striking features of the French countryside is the sense of space and diversity.

After returning home to Ireland from Australia with my young family and my Land Rover, we took a few months to settle back in – then we were keen to explore some of the many exciting destinations Europe has to offer. So where can you go with your family and your 4WD that will provide some great camping, off-the-beaten track driving, guaranteed sunshine, a cultural experience and all on a budget?

With so many places to visit in Europe we'd decided we were going to make France our first port of call. This was not an easy choice given the extensive number of accessible countries able to provide all of the above.

The French have a great worldwide reputation for superb camping facilities. When looking for details online on the type of camping available, you'll find loads of information. On the other hand when searching online for recommended off-the-beaten

tracks, the information available is not as plentiful. It was going to be a case of studying the maps and seeking out the many dusty tracks scattered throughout this vast country.

Your camping experience in France will very much depend on your budget. There are campsites offering Wi-Fi, bars, fun parks, restaurants, and beauty salons. You can even get fresh bread delivered to your tent or trailer first thing in the morning.

France is one of the largest countries in Europe, so there's a lot of open space to explore. It's also home to some of the oldest traces of human life dating back to nearly two million years ago. The country is also very accessible by vehicle with numerous ferry routes from the UK and Ireland.

On this trip we were keen to find the dusty tracks in the south of the country but also to explore the other diverse terrains that included the extensive river gorges and mountain systems that include the Alps, Loire valley and the Rhone, which divides the Massif Central from the Alps.

Prior to booking our trip, we were advised to go before the French schools closed for holidays as this would give us the luxury of not having to book campsites in advance. This would also help us avoid the painful traffic jams that occur along the south coast of France in the holidays. We travelled at the end of May and this proved to be excellent advice as we

“We were keen to find the dusty tracks in the south”



ROAD CONDITIONS

FRANCE has the same population as the UK the only difference but it is spread over twice as much surface area, which tends to mean less congestion on the roads, easier driving than in the UK, and plenty of untarred tracks to explore.

To really get off the road or off the beaten track, travel on the D roads or follow the Bison Futé signs which indicate quieter or alternative routes.

The D roads travel through some of the country's best scenery particularly in the mountain regions and they often lead to dirt tracks/greenlanes.

France offers a first-class network of minor roads. Roads whose numbers are marked as D9** (eg D947) are generally former "national" routes, now downgraded because they are essentially regional routes; linking local small towns, these roads are often very well maintained by local authorities, and offer safe, easy driving.



were almost guaranteed a choice of pitches since the camping season had yet to kick in.

We had done our research and we were packed up and raring to go. Our 14-year old Defender was serviced and loaded with enough camping gear and equipment to travel all the way to India. On board were my wife, our two children and myself.

The plan was to do a half loop of the country, starting our journey in Normandy in the North West, then driving south towards the Loire valley, Angers, Aquitaine, Limoges and Rodez, before arriving at the Gorge du Tan, our first camping base. After a couple of days of superb camping we then continued towards the South of France stopping off in Rodez, and

Montpellier before arriving at our second camping base in Port Grimaud, located along the sunny Côte d'Azur. On the return leg of the trip, we headed east towards the French and Italian Alps, then went north to a beautiful campsite at the base of Mont Blanc, bordering the Italian and Swiss borders – before finally heading back towards Normandy.

As we drove down south we mostly stayed on the rural routes and deliberately avoided the motorways. As you drive through rural France you will immediately be struck by the laid-back rural lifestyle.

On the first leg of our journey we stayed in a couple of campsites, one of which presented my first ever experience of glamping; this incorporated staying in a large family tent that had a fridge, beds, cooker, cupboards, the works. Although not my choice of camp set ups, the wife and kids loved it and it saved us the hassle of unpacking everything for one night only.

As you continue further south you'll quickly notice the weather getting warmer. As mentioned above one of our earlier stop-overs was at the Gorge du Tarn, a magnificent canyon not far from Rodez. We decided to stay at the Peyrelade Campsite, located near the twelfth century Château of Peyrelade. We set up camp right on the banks of the picturesque River Tarn. After a couple of days' exploring the Gorge region and taking in some of the local greenlanes, we packed up and continued south, passing over the highest viaduct



DRIVING TIPS

BEFORE you set out on your journey, it's important to get your Land Rover serviced. You may be travelling long distances and prevention is better than cure.

There are also some compulsory items that you will have to take with you when driving in France. By law, a self-test breathalyser is required on-board, also if you breakdown you will need to have a reflective jacket and a warning triangle on board. Most Irish and UK vehicles have Euro plates; if you don't you will need to display the sticker eg UK/IRE/SCOT.

Tolls: 'Le Péage'

Driving in France can be expensive, particularly if you use the motorways only. To avoid this expense you should plan ahead, the distance from Cherbourg in the north-west to St Tropez in the south is 1200 km or 800 miles. You can pay up to one euro per 10 km on some of the roads and if you are towing a caravan or camper trailer the price goes up significantly.

There are secondary toll-free roads that very often are near motorway quality themselves and are a much cheaper option. If you want to save some money the best option is to stay off the tolls and concentrate on the D roads; these small country roads will allow you to experience rural France and often lead to the dirt tracks that take you off the beaten path.

Driving in the Alps

Even if there's no snow on the road, you should always be aware of possible black ice. And if there is snow, put on your snow chains. If you've never used snow chains before it is advisable to practise putting them on. When descending the mountains put your vehicle in low gear, keep your speed down and use engine braking.

bridge in the world, near Millau. This viaduct is not only the world's highest suspension bridge, but also one of the longest. The bridge rests on seven pillars, and spans 1.5 miles, with the tallest portion of the bridge reaching a staggering 244 metres high. As you drive across it, you won't quite need an oxygen mask – but you'll definitely get a sense that you are driving amongst the clouds.

Finding the network of dirt tracks in France requires some research and when you locate them, the question is how do you know if you are allowed to drive on them? Generally you are allowed to use an existing public lane, though look out for signs that read "Propriété privée" this means private property and you should keep off these lanes. In France the same rules apply to driving on greenlanes as in the UK: drive slowly and in small groups and keep all your litter in your car. The tracks are mostly in good condition but can be dusty and rough in spots particularly if you head into the forested areas.

From our base camp in the Côte D'Azur you can easily find a maze of mountainous tracks close to the coastline, but if you want to go higher, you can also pop over into the French and Italian Alps. It's less than a half a day's drive from the Côte D'Azur and that will take you directly into the North of Italy. While there, you can follow the ancient trade routes that take you through quaint Italian villages and climb to breathless heights.

Depending on the time of year, you may have to bring snow chains as you can drive to heights up to 10,000 feet. Driving through the Alps is something everyone should do at least once. Alpine roads present

some of the most beautiful scenery with incredible vistas of the surrounding landscape. It's worth taking time to explore the back roads and tracks this region has to offer, as they meander their way through the French Alps into Italy.

If you don't have suitable off-road tyres you can take the Route des Grandes Alpes (Great Alpine Road), described as one of the most amazing roads in the world, consisting of 684 km of narrow blacktop. This Alpine road trip takes you from Lake Geneva to the Mediterranean and includes some of the highest and most beautiful mountain passes in Europe. We experienced a section of this route starting at Menton; the official and shorter direct route is marked green on the map and takes in the famous Col de Turini.

The scenery in this part of the Alps can only be described as stunning. Unfortunately, we did not have as much time to play around and explore. You could spend weeks discovering the endless amount of mountain tracks.

After a superb week-and-a-half camped up at our base along the Côte d'Azur, we packed up and headed towards the Swiss, French and Italian border and on towards our next camp located at the base of Mont Blanc. At 15,782 ft above sea level, the highest point in Western Europe, this mountain has a very dominating presence indeed.

When leaving the south of France we drove up through the Rhône Valley and headed for Shamanic. We found an amazing campsite called Les Deux Glaciers which is open all year round, located just three kilometres south of Chamonix. You can pitch your tent at the base of a glacier with magnificent



“Driving through the Alps is something everyone should do at least once”





Mountain greenery
a-plenty; but snow
chains might be useful
as some routes take
you above 10,000 feet

GETTING THERE

FROM the UK, the Channel Tunnel is the quickest way to get to France, though not the cheapest. It's advisable to always book in advance. The advantage of ferries of course is being able to take your own Land Rover.

There are a number of ferry companies running from the UK and Ireland.

• BEST TIME TO TRAVEL

The best times of year to travel to France are between April and October, but note that July and August tend to be very busy months. If you are not bound by the restrictions of school terms, and don't have to travel then, you'll be able to avoid peak season traffic. It's also much more affordable to travel in April, May and early June.

• CLIMATE

The South of France has a Mediterranean climate with mild temperatures in the winter and hot summers. In the west, the climate is predominantly oceanic with a high level of rainfall, mild winters and warm summers. Inland the climate becomes more Continental with hot, stormy summers, colder winters and less rain. The climate of the Alps and other mountainous regions is mainly Alpine; with the number of days when temperatures are below freezing, don't be surprised to see the peaks covered in snow for over six months of the year.

• MAPS

Good greenlaning maps for France include the Memory-Maps (IGN) 1:25000. These maps clearly identify greenlanes.

If you join Codever <http://www.codever.fr> they will send you a useful booklet which explains where you can legally greenlane.

Other useful maps include the IGN Carte de Randonnee 1:25000. These are detailed maps that cover everything down to the narrow pathways, even barns, rivers and springs. If you know where you are going these maps are very useful as every part of France is covered.



“We explored deep gorges and dusty inland tracks”

INFO/CONTACT

OFF Roothing in Europe
<http://ordinarytraveler.com/articles/off-road-driving-destinations-around-the-world>

http://atlasoverland.com/tour_thealps.php
Camping Contacts

Camping les Deux Glaciers
(3 Star)
<http://www.campingpeyrelade.com/en-gb/accueil.aspx>

<http://www.chamonix.com/camping-les-deux-glaciers,campsites-motorhome-area,48-3024-74AACAM100026,en.html>

<http://www.frenchcampsites.co/campsites/detailed-information/burgundy-jura-and-franche-comte/gigny-sur-saone-chateau-de-leperviere.html>

FUEL & FOOD

France has plenty of service stations equipped with cafes and restaurants.

Fuel prices are pretty much the same as in the UK and Ireland.

Right and below:
Russ's family's Defender saw a vast array of locations, as well as some pretty tempting culinary items

views of the Mont Blanc Range and the Aiguille du Midi. Unfortunately we had only one night here, as we needed to make our way towards Normandy prior to catching the ferry home.

After arriving in Normandy with a day to spare before boarding the boat, we decided to explore the beaches of Normandy and the huge variety of museums and historical sites dedicated to the D-Day landings which changed the course of WWII.

There's no doubt about it: France definitely has a well-earned reputation when it comes to campsites with a huge variety on offer. It also possesses a wide variety of dirt tracks meandering through very diverse landscapes, from coastal plains in the north and west – to mountain ranges of the Alps in the south-east, the remote Massif Central in the south-central and Pyrenees in the south-west.

We gave ourselves just over three weeks to cover everything we saw and this gave us plenty of time with just a couple of big days' driving. We were able to spend three nights along the Gorge du Tarn and ten nights in the Côte d'Azur the rest of the time was made up of shorter camping stopovers.

On this trip we explored deep gorges and dusty inland tracks that hugged the Mediterranean coastline. Our Land Rover tackled steep routes that took us through the Alps and into Italy. We experienced quiet rural roads that embraced the many quaint villages and rural landscape in central France before reaching the historic Normandy and the D-Day landing beaches. This was just a taste of what France has to offer. If you're looking for a trip that offering dusty green lanes, excellent camping and diverse environments, France won't disappoint.





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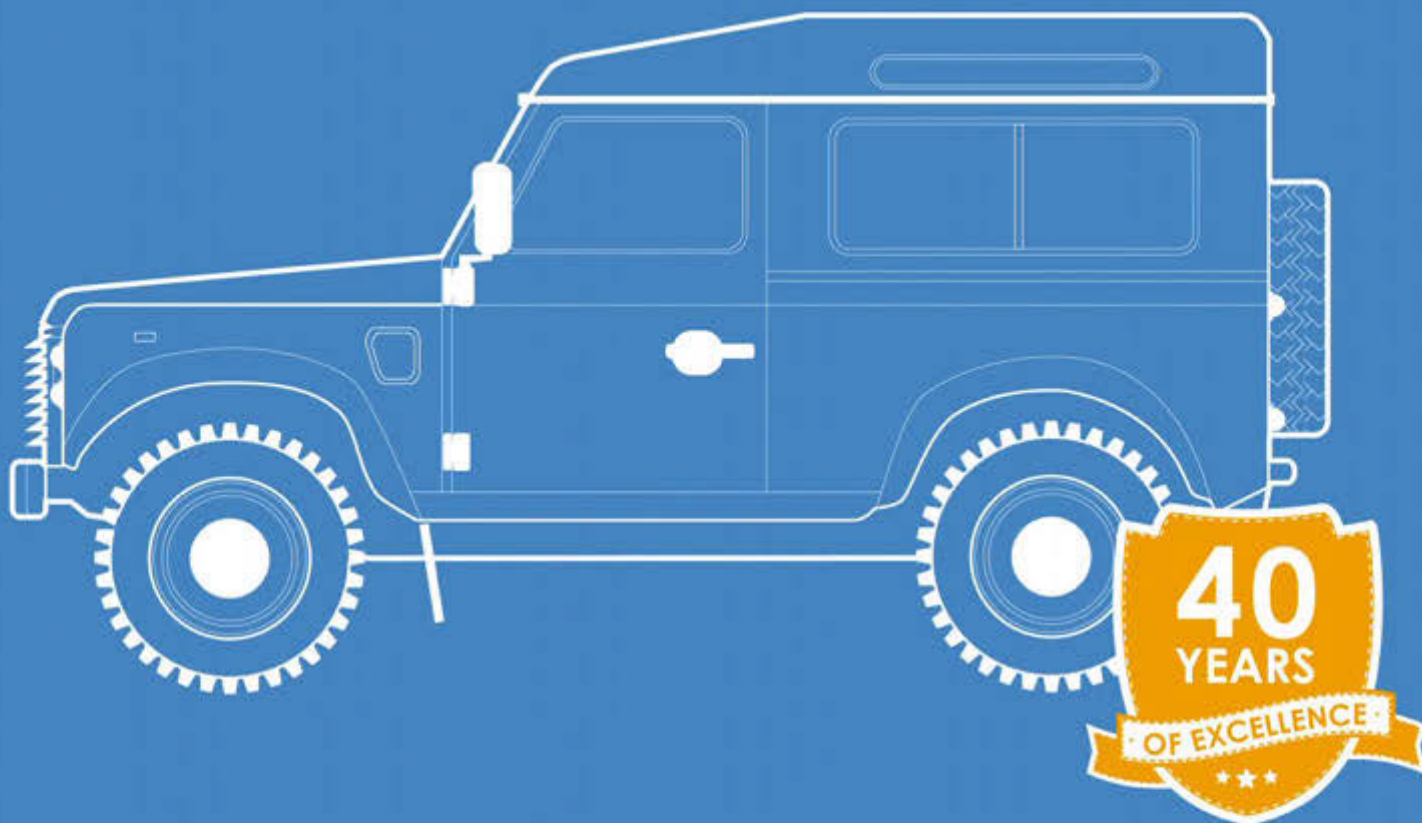


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CBB228B	41"	8 Dr cabinet	1126x468x1000	£399.00	£478.80
1 CBB224B	41"	14 Dr chest	1045x415x486	£269.98	£323.98
2 CBB226B	41"	16 Dr cabinet	1126x468x1000	£459.00	£550.80
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6 CTC1300B	13 Dr chest/cab	620x330x1320	£149.98	£179.98
PROFESSIONAL RANGE				
7 CTC103	3 Dr step up chest	672x310x250	£49.98	£59.98
8 CTC106	6 Dr drop front	662x305x365	£64.99	£77.99
9 CTC109	9 Dr cabinet	662x305x421	£74.99	£89.99
10 CTC105	5 Dr cabinet	685x465x790	£169.98	£203.98
11 CTC107	7 Dr cabinet	685x465x950	£199.98	£239.98

‡ was £155.98 inc.VAT

HEAVY DUTY & PROFESSIONAL

THE ULTIMATE IN TOOL STORAGE!

- Extra heavy gauge double wall steel construction

MAX. WEIGHT LOADING 500KG EVENLY DISTRIBUTED

RUBBER GRIP SIDE HANDLES

EXTRA LARGE SIDE HANDLE FOR EASY MOVEMENT FITS EITHER SIDE

EXTRA LARGE DRAWER PULLS

EXTRA LARGE SIDE HANDLE FOR EASY MOVEMENT FITS EITHER SIDE

BLUE YELLOW

FULL DETAILS - SEE IN-STORE OR VISIT WEBSITE

BIG 5" WHEELS

MODEL	DESCRIPTION	DIMS WxDxH (mm)	EXC.VAT	INC.VAT
1 CBB206B	6 Dr Chest	710x328x365	£99.98	£119.98
2 CBB209B	9 Dr Chest	710x315x420	£119.98	£143.98
3 CBB210B	10 Dr Chest	710x315x475	£139.98	£167.98
4 CBB203B	3 Dr step up	710x315x250	£69.98	£83.98
5 CBB215B	5 Dr Cabinet	758x468x815	£199.98	£239.98
6 CBB212B	3 Dr Cabinet	755x470x810	£169.98	£203.98
7 CBB217B	7 Dr Cabinet	758x468x975	£249.98	£299.98
8 CBB213B	3 Dr Cabinet	758x481x975	£199.98	£239.98

GREAT LOOKING, BIG 5" INDUSTRIAL CHROME SPOKED WHEELS FOR EASY MOVEMENT

HEAVY DUTY PRO TOOL CHESTS/CABINETS

BLACK GOLD LINE

These great looking top quality units are built for tough daily use in automotive and industrial workshops.

EXTRA LARGE DRAWER PULLS

FULL DETAILS ONLINE OR IN-STORE

EXTRA LARGE SIDE HANDLE FOR EASY MOVEMENT FITS EITHER SIDE

MODEL	DESCRIPTION	DIMS WxDxH (mm)	EXC.VAT	INC.VAT
1 CBB209BGB	9 Dr chest	710x315x420	£119.98	£143.98
2 CBB217BGB	7 Dr cabinet	758x468x975	£239.98	£287.98
3 CBB224BGB	14 Dr chest	1045x415x486	£279.98	£335.98
4 CBB226BGB	16 Dr cabinet	1126x468x1000	£479.00	£574.80

‡ was £299.98 inc.VAT

GREAT LOOKING, BIG 5" INDUSTRIAL CHROME SPOKED WHEELS FOR EASY MOVEMENT

BALL BEARING ROLLER DRAWERS

1 **£119.98** EXC.VAT
£143.98 INC.VAT

2 **PRICE CUT**
£239.98 EXC.VAT
£287.98 INC.VAT
WAS £299.98 inc.VAT

Clarke **BOLTLESS SHELVE**

• Simple, fast assembly in minutes using only a hammer

ROLLED EDGE UPRIGHTS GIVE:

- ✓ EXTRA STRENGTH
- ✓ SMOOTHER FINISH
- ✓ SLEEK LOOK

ASSEMBLE AS SHELVING, BENCH OR CORNER UNIT

PER SHELF

150 (evenly distributed) Strong 9mm fibreboard shelves

350 (evenly distributed) Strong 12mm fibreboard shelves

Contents not included (all items)

MODEL SHELF DIMS WxDxH (mm) EXC.VAT INC.VAT

150Kg	800x300x1500	£29.98	£35.98
350Kg	900x400x1800	£49.98	£59.98

SAVE 10%

WHEN YOU BUY ANY MIX OF 5 FROM THIS RANGE SAVE AT LEAST **£17.99** INC.VAT

CHOICE OF 5 COLOURS (all items)

RED, BLUE, BLACK, SILVER & GALVANISED STEEL

Clarke GENERATORS

Honda engine models available

FROM ONLY £89.98 EX VAT
£107.98 INC VAT

MODEL	KVA	HP	EX VAT	INC VAT
FG3005	0.7	-	£89.98	£107.98
G1200	1.1	-	£149.98	£179.98
FG2500	2.4	6.5	£189.98	£227.98
FG3005	2.8	7	£229.98	£275.98
FG3050	3	8	£359.00	£430.80
FG4050ES	4.5	11	£469.00	£562.80
FG5100ES	5.5	13	£539.00	£646.80

CHECK FRAME TYPE WHEN ORDERING

* was £191.98 inc VAT

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Clarke JUMP STARTS

- Integral work light
- Extra long 1m leads
- 910 includes air compressor
- Long life battery

FROM ONLY £49.98 EX VAT
£59.98 INC VAT

HEAVY DUTY 17KG

MODEL	START BOOST	PEAK AMPS	EX VAT	INC VAT
910	400A	900A	£49.98	£59.98
910	400A	900A	£59.98	£71.98
4000	700A	1500A	£109.98	£131.98
12/24 1000A@12v 2000A@12v			£129.98	£155.98
500A@24v 1000A@24v				

Clarke INVERTER GENERATORS

IG1000 **£389.98 EX VAT**
£467.98 INC VAT

PRICE CUT £229.98 EX VAT
£275.98 INC VAT

IG2200

Produces pure sine wave & stable power, essential for computers & sensitive equipment • Max output: IG1000, 1000W Max output: IG2200, 2200W • 4 stroke engine • Super quiet running (only 64dBa at 7M 1/4 load) • Low oil shut down • Ideal for caravanning, & boating etc.

Clarke TURBO FAN GAS HEATERS

• Low cost heating for the garage, workshop etc. • Propane gas fired

FROM ONLY £69.98 EX VAT
£83.98 INC VAT

*Stainless Steel
#Variable output
#Dual Volt 110/230

LITTLE DEVIL 2

MODEL	HEAT OUTPUT MAX. KW	EXC. VAT	INC. VAT
Little Devil II	10.3	£69.98	£83.98
Little Devil SS II	10.3	£79.98	£95.98
Devil 650	15	£89.98	£107.98
Devil 660 SS	15	£109.98	£131.98
Devil 850	12.4-31	£139.98	£167.98
Devil 860 SS	31	£149.98	£179.98
Devil 1850	26.9-58	£299.98	£359.98
Devil 3000	35.8-82	£339.98	£407.98
Devil 4000	70-131	£399.98	£479.98
Devil 3150	46-100	£469.98	£563.98

Clarke HEAVY DUTY INSTANT GARAGES/WORKSHOPS

• Ideal for use as a garage/workshop • Extra tough triple layer weatherproof fabric • Heavy duty powder coated steel tubing

• Ratchet light tensioning

NEW 10' RANGE NARROWER WIDTH GREAT WHERE SPACE IS TIGHT

ZIP CLOSE DOOR

FROM ONLY £219.98 EX VAT
£262.80 INC VAT

LENGTH UP TO 24'

Clarke MIG WELDERS

All models include:

- Gas regulator
- Earth clamp
- Face mask
- Welding torch
- Pro90-151TE includes CO2 gas bottle

135TE

FROM ONLY £179.98 EX VAT
£215.98 INC VAT

MODEL	MIN-MAX AMPS	EX VAT	INC VAT
PRO90	24-90	£179.98	£215.98
110E	30-100	£214.99	£257.99
135TE	30-130	£239.98	£287.98
151TE	30-150	£269.98	£323.98
165TEM	30-155	£339.00	£406.80
175TECM	30-170	£409.00	£490.80
205TE	30-185	£449.98	£539.98

Clarke TURBO AIR COMPRESSORS

• Super range ideal for DIY, hobby & semi-professional use

FROM ONLY £79.98 EX VAT
£95.98 INC VAT

8/250

BIG 2HP 7.5CFM

HUGE CHOICE OF SPRAY GUNS & AIRTOOLS

*Stationary belt driven

MODEL	MOTOR CFM	TANK	EX VAT	INC VAT
Tiger 8/250	2hp	7.5	£79.98	£95.98
Tiger 7/250	2.5hp	7	£89.98	£107.98
Tiger 11/250	2.5hp	9.5	£119.98	£143.98
Tiger 8/510	2.5hp	7.5	£129.98	£155.98
Tiger 11/510	2.5hp	9.5	£149.98	£179.98
Tiger 16/510	4.5hp	14.5	£219.98	£263.98
Tiger 16/1010	3hp	14.5	£269.98	£323.98

Clarke ANGLE GRINDERS

FROM ONLY £19.98 EX VAT
£23.98 INC VAT

CAG800

INC. DISC & HANDLE

MODEL	DISC (mm)	MOTOR	EXC. VAT	INC. VAT
CAG800	115	800w	£19.98	£23.98
CON1050	115	1050w	£27.99	£33.59
B&D CD115	115	710w	£29.98	£35.98

Clarke INDUSTRIAL ELECTRIC FAN HEATERS

• Rugged fan heaters for small to medium sized premises

• Tough steel cabinets

• Adjustable heat output with thermostat

FROM ONLY £37.99 EX VAT
£45.99 INC VAT

DEVIL 6003

MODEL	HEAT OUTPUT	EXC. VAT	INC. VAT
Devil 6002	0.7-2KW	£37.99	£45.99
Devil 6003	1.5-3KW	£49.98	£59.98
Devil 6005	2.5-5KW	£74.99	£89.99
Devil 6009	4.5-9KW	£129.98	£155.98
Devil 6015	5-10.15KW	£189.98	£227.98

Clarke ENGINE CRANES

FROM ONLY £144.98 EX VAT
£173.98 INC VAT

CFC100

MODEL	DESC.	EX VAT	INC VAT
CFC500F	1/2 ton folding	£144.99	£173.99
CFC100	1 ton folding	£189.98	£227.98
CFC1000LR	1 ton long reach		

• Folding and fixed frames available

• Robust, rugged construction

• Overload safety valve

Fully tested to proof load

Clarke SUBMERSIBLE WATER PUMPS

HANDLES SOLIDS UP TO 30MM DIAMETER

*A denotes auto float switch
† denotes sewage cutter pump

HOSE ALSO AVAILABLE

FROM ONLY £44.99 EX VAT
£53.99 INC VAT

MODEL	MAX FLOW LPM	HEAD M	EX VAT	INC VAT
PSV1A*	140	5.8m	£44.99	£53.99
CSV2	236	9m	£99.98	£119.98
CSV2A*	253	10m	£109.98	£131.98
HSEC650A†	290	9.5m	£184.99	£221.99

Clarke 24V CORDLESS IMPACT WRENCH

• Inc. 17, 19, 21 & 23mm chrome vanadium sockets

• 2x 24V Ni-Cd Batteries & 1 hour battery charger

FROM ONLY £89.98 EX VAT
£107.98 INC VAT

CIR220

HEAVY DUTY

MODELS	MAX TORQUE	EXC. VAT	INC. VAT
Cordless CEW1000	450Nm	£56.99	£68.39
Cordless CIR450	450Nm	£119.98	£143.98

Clarke QUALITY CAST IRON STOVES

6.9KW

POT BELLY

PRICE CUT £209.00 EX VAT
£250.80 INC VAT

£107.98 WAS £119.98 INC VAT

20 STYLES AVAILABLE SEE IN-STORE OR ONLINE

FLUES, COWLS & ACCESSORIES AVAILABLE

Clarke HYDRAULIC BOTTLE JACKS

FROM ONLY £7.99 EX VAT
£9.59 INC VAT

MODEL	EX VAT	INC VAT	MODEL	EX VAT	INC VAT
2 tonne	£7.99	£9.59	8 tonne	£17.99	£21.59
4 tonne	£11.99	£14.39	12 tonne	£24.99	£29.99
6 tonne	£14.99	£17.99	20 tonne	£34.99	£41.99

Clarke DRILL PRESSES

• Tables tilt 0-45° left & right

• Depth gauge

• Chuck guards

B-Bench mounted

F-Floor standing

FROM ONLY £59.98 EX VAT
£71.98 INC VAT

MODEL	WATTS	EXC. VAT	INC. VAT
CDP5EB	350/5	£59.98	£71.98
CDP10B	245/5	£79.98	£95.98
CDP15B	300/5	£106.99	£128.39
CDP10B	370/12	£169.98	£203.98
CDP30B	510/12	£199.98	£239.98
CDP45F	510/16	£239.98	£287.98
CDP50F	980/12	£429.00	£514.80

Clarke HAND TOOLS

ONLY £22.99 EX VAT
£27.59 INC VAT

SOCKET SETS

Top quality chrome vanadium steel.

- 18 Sockets 8-32mm
- Reversible ratchet
- Comfort grip handle

PRO155

HUGE RANGE OF RATCHETS, SPANNERS AND SOCKET SETS

Clarke PETROL POWER WASHERS

Honda & Diesel engine models available

FROM ONLY £179.98 EX VAT
£215.98 INC VAT

PLS190N

MODEL	PRESSURE PSI	EXC. VAT	INC. VAT
Tiger 1700	1595psi	£179.98	£215.98
Tiger 2500	2465psi	£249.98	£299.98
Tiger 2900	2900psi	£299.98	£359.98
PLS190N	2697psi	£379.98	£455.98
PLS260N	3625psi	£569.00	£682.80

Clarke BATTERY CHARGERS/ENGINE STARTERS

• Ammeter

• Multi-position charge regulator

• Overload protection on charging cycle

BC520N

MODEL	MAX AMPS CHARGE/BOOST	EXC. VAT	INC. VAT
BC100N	15/100	£47.99	£57.59
BC130C	15/120	£61.99	£74.39
BC190	38/180	£89.98	£107.98
BC210C	15/120	£94.99	£113.99
BC410E	35/400	£129.98	£155.98
BC520N	50/510	£189.98	£227.98

Clarke BODY REPAIR KITS

FROM ONLY £79.98 EX VAT
£95.98 INC VAT

CS10BRK

• Fast snap connector attachments for quick & easy assembly • Hydraulic pump, ram & hose with various tubes, pieces & connectors

• Includes metal case

• Fast action pump

MODEL	CAPACITY	EXC. VAT	INC. VAT
CS4BRK	4 tonne	£79.98	£95.98
CS10BRK	10 tonne	£139.98	£167.98
CS10SBRK*	10 tonne	£149.98	£179.98

Clarke SUPERWINCH

• 24v

FROM ONLY £79.98 EX VAT
£95.98 INC VAT

LI2000

MODEL	CAPACITY	EXC. VAT	INC. VAT
LI2000	907kg	£79.98	£95.98
UT3000	1360kg	£139.98	£167.98
S4000	1814kg	£299.98	£359.98

Clarke SOCKET SETS

Top quality chrome vanadium steel.

- 18 Sockets 8-32mm
- Reversible ratchet
- Comfort grip handle

PRO155

HUGE RANGE OF RATCHETS, SPANNERS AND SOCKET SETS

Clarke AXLE STANDS

• Ratchet action for quick height adjustment

• Solid in pairs

FROM ONLY £18.49 EX VAT
£22.19 INC VAT

3 TON & 6 TON MODELS

MODEL	TONS	HEIGHT	EXC. VAT	INC. VAT
CAX-3TBC	3	300-430mm	£18.49	£22.19
CAX-6TBC	6	400-615mm	£29.98	£35.98

Clarke STRUT SPRING COMPRESSOR

• Foot operated hydraulic powered

• Adjustable for springs up to 350mm dia. & 254mm in length

• Yoke travel: 340mm

FROM ONLY £199.98 EX VAT
£239.98 INC VAT

SSC1000

Clarke 3 TONNE JACKS

FROM ONLY £44.99 EX VAT
£53.99 INC VAT

JACKS ALSO IN STOCK UP TO 5 TONNE

MODEL	TYPE	SADDLE HEIGHT	EXC. VAT	INC. VAT
CTJ3000QL	Quick Lift	195-520	£44.99	£53.99
CTJ300LQ	Pro Instant Lift	145-520	£83.99	£100.79
CTJ3000G	Pro Garage	120-520	£84.99	£101.99

Clarke JETSTAR PRESSURE WASHERS

• JET8000 & 9000 include hose reel

• Detergent applicator for extra cleaning power

FROM ONLY £49.98 EX VAT
£59.98 INC VAT

MODEL	MOTOR	MAX. PRESSURE	EXC. VAT	INC. VAT
JS1750	1600w	1522psi	£49.98	£59.98
JS1900	2000w	1957psi	£79.98	£95.98
JET8000	2400w	2610psi	£134.99	£161.99
JET9000	2600w	2900psi	£159.98	£191.98

Clarke 1/2" TORQUE WRENCH - CHT141

• 5" Extension bar 1/2" - 3/8" adaptor • 28-210 Nm

ONLY £19.98 EX VAT
£23.98 INC VAT

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BURTON UPON TRENT 12a Lichfield St, DE14 3QZ	01283 564 708	IPSWICH Unit 1 Ipswich Trade Centre, Commercial Road	01473 221253	PRESTON 53 Blackpool Rd, PR2 6BU	01772 703263
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CARLISLE 85 London Rd, CA1 2LG	01228 591666	LINCOLN Unit 5, The Pelham Centre, LN5 8HG	01522 543 036	SOUTHAMPTON 516-518 Portsmouth Rd.	023 8055 7788
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CHESTER 43-45 St. James Street, CH1 3EY	01244 311258	LONDON CATFORD 289/291 Southend Lane SE6 3RS	0208 695 5684	STONE-ON-TRENT 382-396 Waterloo Rd, Hanley	01782 287321
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COVENTRY Bishop St, CV1 1HT	024 7622 4227	LONDON 503-507 Lea Bridge Rd, Leyton, E10	020 8558 8284	SWANSEA 7 Samlet Rd, Llanesamlet, SA7 9AG	01792 792969
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DERBY Derwent St, DE1 2ED	01332 290 931	MANCHESTER 170-171 Manchester Rd, Altrincham	0161 942 066	WIGAN 2 Harrison Trade, WN5 9AU	01942 323 785
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GLASGOW 28					



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UPCOMING EVENTS

WHAT'S ON THIS MONTH LAND ROVER DIARY

Dave Barker showcases the best gatherings to attend in your Land Rover

MARCH 7-8

Breckland Land Rover Club
Tyro, RTV, CCV Trial
Glaven, Norfolk
www.brecklandlrc.com

MARCH 7-8

Peak & Dukeries LRC
Tyro & CCV Trial
Norwood Edge, Mansfield
www.panddlrc.co.uk

MARCH 7

Yorkshire 4x4 Specialists
4x4 Tour White Peak
Peak District
Tel: 01757 638479. www.yorkshire4x4specialists.com

MARCH 7

Rufforth Autojumble
Rufforth Park near York
www.rufforthautojumble.com

MARCH 8

All Wheel Drive Club
Trial Usk, Monmouthshire
www.allwheeldriveclub.net

MARCH 8

Cornwall & Devon LRC
Comp Safari
Tredinnick, Cornwall
www.cdllrc.com

MARCH 8

Cornish Leaf and Coil Club
Challenge Nancemellan,
Cornwall
<http://clcc.uk.com>

MARCH 8

Lincolnshire LRC
Comp Safari, Manton, Lincs
www.llrc.co.uk

MARCH 8

Pennine Land Rover Club
CCV & RTV Trial
Rocking Stones, West Yorkshire
www.penninelandrover.co.uk

MARCH 8

Somerset & Wiltshire LRC
CCV / RTV Trial,
Ubley, Somerset
www.somersetandwiltshirelrc.co.uk

MARCH 8

Southern Rover Owners Club
RTV/CCV Trial, Titsey, Surrey
www.sroc.co.uk

MARCH 8

Suffolk Land Rover Club
Winch Trial, Snuggs Pit, Sudbury
www.slroc.uk.com

MARCH 8

4x4 Without a Club
4x4 day, Harbour Hill,
Aldermaston
www.4x4-withoutaclub.co.uk

MARCH 8

Avalanche Adventure
Sunday pay & play day
Sibbertoft, Market Harborough
www.avalancheadventure.co.uk

MARCH 8

Devils Pit
Pay and Play Day
Barton-le-Clay, Bedfordshire
www.devilspit.co.uk

MARCH 8

Frickley 4x4 Offroad Centre
Pay and Play Day
South Elmsall, South Yorkshire
www.frickley4x4.co.uk

MARCH 8

David Mitchell's Landcraft 4x4
Snowdonia Adventure Drive
Bala, North Wales
Tel: 07831 258864.
www.landcraft4x4.co.uk

MARCH 8

John Morgan 4x4 Driving
4x4 Owners Day
Boxgrove Quarry, West Sussex
www.4x4driving.co.uk

MARCH 8

Yorkshire 4x4 Specialists
4x4 Tour White Peak District
Tel: 01757 638479. www.yorkshire4x4specialists.com

MARCH 8-9

1stOverland
Mid Wales Greenlaning Weekend
Mid-Wales
www.1stoverland.co.uk

MARCH 14-15

Midland Rover Owners Club
RTV & CCV Trial, camping
weekend, Avon Dasset,
Warwickshire
www.mroc.co.uk

MARCH 14-15

Poland - Wroclaw Off-Road
Warsaw
www.wms.info.pl

MARCH 14-15

Spain - Les Comes 4x4 Festival
Multibrand All Terrain Vehicle
meeting, Suria, Spain
www.lescomes4x4festival.com

MARCH 14

Solent and District LRC
Greenlane trip
www.sadlrc.co.uk

MARCH 14

UK Landrover Events
Tynedale Tour
www.uklandroverevents.com

MARCH 15-28

Morocco - Atlas Overland
Morocco Classic Tour
Tel: 07834 637355
www.atlasoverland.com

MARCH 15

All Wheel Drive Club
Trial Mow Cop, Congleton,
Cheshire
www.allwheeldriveclub.net



ADVENTURE DRIVE MARCH 8

David Mitchell's Landcraft 4x4 is running a Snowdonia Adventure Drive on Sunday March 8. The drive will start in the Bala area of North Wales at around 9.30am, run until approximately 4pm and will take you in your own Land Rover on a day-long Snowdonia 4x4 Adventure Drive through the beautiful mountains and forests of North Wales. Driving through stunning scenery with spectacular views along forest tracks and hillsides, all on private land, available only to Landcraft. You will need to use four-wheel drive, but the tracks chosen will be suitable for all Land Rovers, and there will be alternative routes in places to take into account the differing capabilities of the vehicles and skills of the drivers. Landcraft organises driving events throughout the year. For further information or to make a booking, telephone or check the website.
Tel: 07831 258864 Web: www.landcraft4x4.co.uk



CONVOY 2015

APRIL 3 - 6

The 2015 C4H (Convoy for Heroes) takes place over the Easter Bank Holiday weekend at the Long Marston Airfield near Stratford upon Avon in Warwickshire and will again be raising money in support of Help for Heroes. The 2014 event raised over £5500. The campsite opens on Friday and activities start on Saturday including an off-road course. The main event takes place on the Sunday with a parade of Land Rovers starting at 1pm, followed by the auction of donations, Easter egg scrambles and the "Twilight Tour" with the campsite closed on Monday at 12 noon. **Web:** www.convoy4heroes.org.uk



EASTER AT EASTNOR

APRIL 2 - 6

Midland Rover Owners Club is holding its Easter Bank Holiday event at Eastnor Castle near Ledbury. Easter at Eastnor is open to all ALRC clubs with camping available from Friday to Monday and an RTV trial on Saturday, CCV trial on Sunday and a Tyro trial on Monday. Please note pre-booking is needed for camping and the trails. Eastnor is also the venue for the 2015 ALRC National Rally also to be hosted by Midland ROC and regarded by many as the best venues for the National Rally in the country. The National Rally takes place over the bank holiday weekend of May 21 to to 26. Easter at Eastnor details can be found on the club's web site and information and booking forms for the ALRC 2015 National Rally is on its dedicated website.

Web: www.mroc.co.uk / www.alrcnational2015.co.uk

MARCH 15

Lincolnshire LRC, CCV Trial
North Ormsby, Louth, Lincs
www.llrc.co.uk

MARCH 15

North Wales Land Rover Club,
Bala, North Wales
www.nwllrc.co.uk

MARCH 15

Suffolk Land Rover Club
Driving Day
Newbourne, Suffolk
www.slroc.co.uk

MARCH 15

Woolbridge Motor Club
4x4 Trial
www.woolbridge.co.uk/4x4-trials.htm

MARCH 15

Explore Off-Road
Silverdale Pay & Play Day
Silverdale, Staffs
<http://exploreoffroad.wix.com>

MARCH 15

Muddy Bottom 4x4
Play Day
Minstead Manor Estate,
near Lyndhurst
www.muddybottom4x4.com

MARCH 15

Parkwood Off Road Centre
4x4 Play Day, Tong, Bradford
www.parkwood4x4.co.uk

MARCH 15

Vintage Sortout and Spares Day
The Tractor World Show
Malvern Showground, Malvern
www.4x4sparesday.co.uk

MARCH 16-23

Morocco - 2nd Carta Rallye
Rallye Raid
Sidi Lahcen - Merzouge
www.rallye-carta.com

MARCH 20-22

Australia - National 4x4 Outdoor Show
Brisbane Showgrounds,
Brisbane
www.4x4show.com.au/

MARCH 20 - APRIL 4

Morocco - Rallye Aicha des Gazelles
Rallye Raid
www.rallyeaichadesgazelles.com

MARCH 21-22

Peak & Dukeries LRC
CCV & RTV Trial
Middleton Top, Crich, Derbyshire
www.panddlrc.co.uk

MARCH 21-22

South Africa - 4x4 & Outdoor Show
Voortrekker Monument, Pretoria
www.4x4outdoorshow.co.za

MARCH 21-22

France - Yorkshire 4x4 Specialists
4x4 Tour Domaine Du Marquenterre
France & Belgium
Tel: 01757 638479. www.yorkshire4x4specialists.com

MARCH 22

All Wheel Drive Club
Comp Safari, Walters Arena,
Glyn Neath, South Wales
www.allwheeldriveclub.net

MARCH 22

Anglian Rover Owners Club
RTV & CCV Trial
Great Westwood, Herts
www.arocoffroad.co.uk/

MARCH 22

BAMA - Spring Foil
Navigation event
Swynnerton, Staffordshire
www.armymotorsports.co.uk/
Disciplines/4x4-Nav

MARCH 22

Breckland Land Rover Club
Greenlaning
www.brecklandlrc.com

MARCH 22

Buxton & District LRC
Trial, Holymoorside, Chesterfield
www.badlrc.co.uk

MARCH 22

Cornwall & Devon LRC
RTV Trial, Ashcombe, Devon
www.cdllrc.com

MARCH 22

Hants & Berks Land Rover Owners Club
RTV Trial and pay & play day
Hogmoor, Hampshire
www.hbro.co.uk

MARCH 22

Shropshire off Road Club
CCV Trial
Hucknells Farm, Shropshire
www.shropshireoffroadclub.com

MARCH 22

Avalanche Adventure
Sunday Pay & Play Day
Sibbertoft, Market Harborough
www.avalancheadventure.co.uk

MARCH 22

Devils Pit
pay and play day
Barton-le-Clay, Bedfordshire
www.devilspit.co.uk

MARCH 22

Frickley 4x4 Offroad Centre
pay & play day
South Elmsall, South Yorkshire
www.frickley4x4.co.uk

MARCH 22

David Mitchell's Landcraft 4x4
Snowdonia Adventure Plus Drive
Bala, North Wales
Tel: 07831 258864.
www.landcraft4x4.co.uk

MARCH 22

John Morgan 4x4 Driving
4x4 Owners Day
Slindon Safari, West Sussex
www.4x4driving.co.uk

MARCH 22

UK Landrover Events
East Yorkshire Tour
www.uklandroverevents.com

MARCH 27-29

Italy - Rainforest Challenge
Italy
www.rainforest-challenge.com

MARCH 27 - APRIL 12

Morocco - MarocAtlas Gibraltar 4x4 Club
Solidarity Raid
Tangier to Dakhlar
<http://marocatlasgib4x4.ning.com>

MARCH 28

Cheshire Land Rover Club
Greenlane day

13TH EASTER INTERCLUB APRIL 3-6

The Essex Land Rover Club is holding its 13th Easter Weekend event at the Essex Gateway site in Thurrock near Lakeside shopping centre close to Arena Essex. The event is open to all ALRC club and 4x4 clubs in the East of England. The event opens on Thursday afternoon with the competitive sections starting on Friday with a Tyro trial, followed on Saturday with the CCV trial and an RTV Trial on Sunday. Monday sees a Comp Safari event run by SORC with the event closing late afternoon. For the children there will be an Easter Egg hunt on Sunday morning. *Web: www.elrc.info*



<https://cheshirelandroverclub.wordpress.com>

MARCH 28-29

Northern Off Road Club
Comp Safari
Wickenby,
Lincs
www.norc.org.uk

MARCH 28-29

Practical Classics Restoration Show
NEC, Birmingham
www.necrestorationshow.com

MARCH 28-APRIL 5

Morocco - 6th Rallye Clasicos de Atlas
www.teknisportmotor.com

MARCH 29

Breckland Land Rover Club
Greenlane run
Norfolk
www.brecklandlrc.com

MARCH 29

Cornwall & Devon LRC
CCV Trial,
Thunder Park,
Cornwall
www.cdllrc.com

MARCH 29

Isle of Man Four Wheel Drive
Mylcheest Challenge Event
round 2
www.4x4.im

MARCH 29

Suffolk Land Rover Club,
CCV Trial
Badwell Ash,
Suffolk
www.slroc.uk.com

MARCH 29

Mud Monsters Challenge
Winch Challenge Round 1
Slindon Safari, West Sussex
www.mud-monsters.co.uk

MARCH 29

Bures Pit
Pay & Play day, North Essex
www.bures-pit.co.uk

MARCH 29

UK Landrover Events
Durham Dales Tour
www.uklandroverevents.com

MARCH 29-APRIL 11

Morocco - Atlas Overland
Morocco Classic Tour
Tel: 07834 637355
www.atlasoverland.com

MARCH 30-APRIL 13

Morocco - Waypoint Tours
Anti-Atlas & Sahara Desert Tour
Morocco
www.waypoint-tours.com

APRIL 2-6

Midland Rover Owners Club
Easter at Eastnor, RTV, Tyro,
CCV Trial, camping weekend
Eastnor, Ledbury
www.mroc.co.uk

APRIL 2-10

Spain / Morocco - Santana Trophy
Navigation and orientation rally
raid. From Linares, Spain to
Marrakech, Morocco
www.santanatrophys.com

APRIL 3-5

Germany - Adventure Northside
Overland & Bushcraft Expo

Vethem, Lower Saxony,
Germany
www.adventure-northside.com

APRIL 3-6

Dorset Land Rover Club
Social Weekend
<http://dorsetrover.co.uk>

APRIL 3-6

Essex Land Rover Club
Easter Weekend event
Tyro, CCV, RTV Trial
and Comp Safari,
Thurrock, Essex
www.elrc.info

APRIL 3-6

Lincolnshire LRC
CCV, RTV & Ladies Trial, Comp
Safari, Wickenby Airfield,
Wickenby
www.llrc.co.uk

APRIL 3-6

Nottingham Land Rover Club
offroad weekend
South Yorkshire
www.nottslrc.co.uk

APRIL 3-6

Southern Rover Owners Club
Tyro, RTV, CCV & JTV Trial
Salehurst, East Sussex
www.sroc.co.uk

APRIL 3-6

C4H
Convoy for Heroes
Long Marston Airfield,
Warwickshire
www.convoy4heroes.org.uk

APRIL 3-6

Australia - Land Rover Show
Melrose, South Australia

www.lrregsa.org.au

APRIL 3-6

4x4 Treks Galloway
Laggan Challenge
Galloway Forest Park,
Dumfries and Galloway
<http://4x4treksscotland.com>

APRIL 4

UK Landrover Events
Yorkshire Dales Tour
www.uklandroverevents.com

APRIL 4

Yorkshire 4x4 Specialists
4x4 Tour 3 Peak, Peak District
Tel: 01757 638479. www.yorkshire4x4specialists.com

APRIL 4

Rufforth Autojumble
Rufforth Park, near York
www.rufforthautojumble.com

APRIL 4-9

Iberia - Yorkshire 4x4 Specialists
4x4 Tour Atlantic to the Med
Portugal & Spain
Tel: 01757 638479. www.yorkshire4x4specialists.com

APRIL 5

Muddy Millers 4x4 Club
Trial
www.muddymillers.net

APRIL 5

Solent and District LRC,
Easter egg treasure hunt
www.sadlrc.co.uk

APRIL 5

Avalanche Adventure
Sunday pay & play day
Sibbertoft, Market Harborough
www.avalancheadventure.co.uk

APRIL 5

Bala 4x4
Pay and Play
Bala, North Wales
www.bala4x4.co.uk

APRIL 5

Frickley 4x4 Offroad Centre
Pay & play day
South Elmsall, South Yorkshire
www.frickley4x4.co.uk

APRIL 5

Muddy Bottom 4x4
Pay & play day
Minstead Manor Estate,
near Lyndhurst,
Hampshire
www.muddybottom4x4.com

APRIL 5

Piccadilly Woods 4x4
4x4 Fun Day, Bonley, East Sussex
www.piccadillywood4x4.co.uk

APRIL 5

UK Landrover Events
North Yorks Moors Tour
www.uklandroverevents.com

APRIL 6

Yorkshire 4x4 Specialists
4x4 Tour, North Yorks Moors
Tel: 01757 638479.

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CLUB OF THE MONTH

Mud and modifications are hot topics as the Essex Land Rover Club gets dirty

SHAKEN NOT STIRRED

Words: Karl Reilly
Pictures: BosunCam



It's been an annual fixture for Essex Land Rover Club for over 25 years now. It started out as an excuse to get out of the house and away from the repeats on the telly, and became known as the Christmas Pudding Shakedown. Essentially it's a day to get muddy and socialise during the Christmas break.

The most recent event was no exception and to make people even happier still, it was wet, windy and very slippery.

There were some Tyro sections for the younger and less experienced drivers to practice their skills in a controlled way while the rest of the site was used for a day of driver practice. The ELRC have their roots as an ALRC trialling club, and now offer the competitive events as part of a smorgasboard of club activities. What was really interesting, was the range of vehicles that had turned out to get muddy, with virtually the whole Land Rover product line represented. There were very few standard Land Rover products, as most had been modified in some way or another.

There was a great turnout, with plenty of people eager to get into the mud. I chatted to some of the drivers about the turnout for a driving practice day compared to a regular trial. They said that trialling numbers across many clubs have been dropping off in recent





“They headed home covered with enough mud to show the neighbours what a Land Rover should be used for”

ESSEX LAND ROVER CLUB

FORMED IN 1983 the Essex Land Rover club caters for all Land Rover enthusiasts in and around the Essex area. The aims of the club are to promote events for Land Rovers, to encourage the use of these vehicles and their equipment for both competitive, practical and leisure purposes. Club activities include both CCV and RTV Trials, the RTV trials being slightly more popular, most competitive events are combined with caravan and camping weekends. The club also organises treasure hunts and other social events through out the year, and the clubs rights of way officer keeps in contact with the local authorities on rights of way and local access problems. The club's bi-monthly newsletter *Essex Exploits* keeps members informed of events and club news as well as items for sale or wanted by members the club is also active on social media with a Facebook page, Twitter, a You Tube channel and an active club forum.

ELRC also are very actively involved with the local emergency planning office and their Rover Rescue Section provides 4x4 vehicles and drivers during times of local emergency. It supports various local charities and through its Easter Interclub event has supported the Essex Air Ambulance for the past 12 years. ELRC also Registered Motor Club' with the Motor Sports Association, a member of the Association of Land Rover Clubs (ALRC), affiliated to the Green Lane Association (GLASS) to promote the sustainable use of unsurfaced rights of way, a member of the 4x4 Response network and is affiliated to the Parish Paths Partnership for the maintenance and upkeep of rights of way around the county.

To find out more, check the club's website, or to join e-mail the club's membership secretary.

Email: membership@elrc.info

CONTACT THE CLUB

TO FIND OUT more about the club visit its web site www.ELRC.info
To see more photos of this event visit BosunCam at
www.bosuncam.org.uk

years, and ELRC is no exception. But why is this the case?

Some interesting views were aired as we tucked in to bacon butties. One in particular was that hardly any of the Rovers out there getting dirty were ALRC compliant for trials.

Yes, they were all Land Rovers through and through, but they would be ruled out of official ALRC trials events for non-standard bumpers, lift kits, oversize wheels, and so forth. Nothing too heinous, though in many cases offering no competitive advantage when it really came to the crunch. It really got a good debate going as to why the rules are the way they are.

A point well-made was that it is increasingly difficult to buy a 'standard' older 90 or Discovery, and many enthusiasts start by buying a vehicle from eBay or Auto Express already tricked up, and then want to enter a club trial, only to be turned away for being non-compliant in some minor way. Is it any wonder they don't come back?

The second great debate was what does the club offer? It was suggested that the clubs are part of the leisure industry and so offer a range of leisure activities for their members to participate in. As such, clubs need to evolve and grow, or stagnate and lose members. We've all got limited leisure time and resources, so we want to do those things that give us the greatest

pleasure, with least hassle.

As the vehicles produced by Land Rover get ever more complicated, what is available to the enthusiast is changing. The future is not only about the Defender 90 up to its axles in mud, but there will be a fleet of Evoques, Freelanders and Range Rover Sports that members own and want to take off-road. In their current form, the average RTV or FVT is really not the territory for these vehicles.

So how do we evolve our sport and hobby to cater for the newer breed of vehicle? Much chewing of bacon fat later, and we were none the wiser, but the world was set straight when a radio call came in to say a 90 was axle-deep in the mud. A broken winch rope, much digging and towing later, and it was eventually free again. Man had triumphed over deep mud.

Sometimes it helps to be a lightweight as a novice in a Freelander was skating around the site, grinning like a Cheshire cat that had got the cream as he drove, mainly sideways, across sloppy muddy ground. At the end of the day, the excesses of Christmas had well and truly been shaken down.

Land Rovers and their owners headed home covered with enough mud to show the neighbours what a Land Rover should be used for. All was well, but there was a nagging thought about the how club life needs to evolve.

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1



LIGHTWEIGHT SHOPPING

The Miller collection just grows and grows

I

f you followed the restoration of my Stage One V8 in the last few issues of LRM, then you'll know that it passed its MoT, without

a hitch. All that was left for me to do was to collect it. So, rather than attempt the 150-mile journey home from the Britpart HQ in Shropshire driving a vehicle that has only just covered the few miles to the MoT station and back, I decided to put it on a trailer and tow it with my Discovery.

The first journey I made, once I had taxed it, was to LRM towers. The trip into work was absolutely fantastic – with the V8 pulling extremely well, the sound from the exhaust made every penny seem oh so worth it. I've had the good fortune of driving many Land Rovers over the years but never a Stage One. If you've never driven one before, I would highly recommend it. The torque from the engine, coupled with its low gearing allows acceleration from 15mph, in 4th gear! This made the trip in to the office a relaxing one due to the limited number of times I had to change gear – 1st gear is unnecessary on the highway, 2nd to pull away, quickly into 3rd then straight into



STEVE MILLER
LRM AD EXEC

300Tdi DISCOVERY

YEAR: 1997 **MILEAGE:** 180,400
ENGINE: 300Tdi
POWER: 111 BHP
TORQUE: 195 lb-ft **MPG:** 28

STAGE ONE V8

YEAR: 1982 **MILEAGE:** 89,000
ENGINE: 3.5 V8
POWER: 125 BHP
MPG: Don't make me cry

LIGHTWEIGHT

YEAR: 1983
MILEAGE: 49,000
ENGINE: 2.25
POWER: 77 BHP
MPG: TBC

4th. I shouldn't have worried about keeping up with modern traffic - it achieves 60 to 70mph with ease.

Well, I've covered around 1000 miles already and I can't imagine life without it. The truck cab still needs a coat of paint and one of the rear wings needs repairing, but that'll have to wait for warmer weather. I also have a problem with one of the carburettors – the dashpot on one of them quickly empties of oil, causing the engine to run rough. When the engine is cold, it takes a fair while for the V8 to finally burst into life which I put down to a fuelling issue. I have checked the other obvious reasons for a difficult-to-start engine, which convinces me even more about the ageing carbs. Aside from that, life with a Stage One is good. It's even earned its keep this month by hauling some logs.

Interestingly, I had a Land Rover 'expert' come up to me at a recent show to congratulate me on the amount of work we'd done rebuilding it. He then went on to say that, although it's nice, I would be ridiculed at any Land Rover show for putting the wrong front end onto a Series III. "The wrong front end? Why, what's wrong with it?" I enquired. He replied:

**DAVE PHILLIPS**

How many mugs of tea can he get through?

**PATRICK CRUYWAGEN**

He's got a warm, comfy Discovery 2 yet sleeps out in the snow!

**MARK DIXON**

Now he's out looking for historic Freelanders

**IAN WEST**

LRM's cartoonist is a Land Rover enthusiast too

2

"I don't have the space, time or money... but I bought it anyway"

"Well, you've put a Defender front end on it!" I had to explain that it was the right front end. It's the transition between the Series III and a One Ten. They were just trialling the front on this V8. (They also needed the extra space to accommodate the V8 engine – Ed.)

A few months ago I got chatting to my girlfriends' work colleague Izzie, who told me all about her first car. It was in fact a Series III Lightweight and she used it to travel to and from the equine veterinary college in it. This was back in 1998, when she was just 18 years old. She didn't want a run-of-the-mill car back then and decided that this was the vehicle for her. I mentioned to her that I too have owned a couple of Lightweights in the past – my first was also when I was 18. Izzie then said that her Lightweight was still in her possession and was parked up, in a barn, at her parents' house and did I know of anyone who would be interested? She said she would only let it go to a good home. Trying not to sound too keen, I asked her to send me a couple of pictures of it when she next went home and I would ask around for her. A couple of weeks later, a text arrived with a few images attached. It was the Lightweight

and it appeared to be in totally standard military trim. The vehicle was located, believe it or not, just 15 miles away from the LRM office, and now I wanted it! I decided to take a trip over to view it.

The Lightweight had been off the road for nine years in an open-fronted barn. A genuine barn-find you might say, but it looked like it had just been parked there. Overall, the condition didn't look too bad and it certainly was as it left the army. I inspected the chassis but it looked dreadful, requiring a good clean-up, a couple of outriggers and, at the very least, a rear crossmember with extensions. The army tended to use an underseal that eventually cracks, goes brittle and allows water to get trapped behind it which inevitably rusts the chassis even quicker. I had a good scrape about and considered my options, very carefully. Could I take on yet another project? Do I have the space, time and money? The answer was no, on all three counts, but I bought it anyway. I mean, how could I resist?

The trailer was hired once again and the Discovery was hauled into action. It's always an exciting time, embarking on a new project.

I'll let you know how I get on...

3**4**

1. Lightweight arrives home;
2. ...so does Stage One;
3. Lightweight in the barn it had inhabited for nine years;
4. Handy for lugging logs.





SLEEPING IN THE SNOW

Patrick survives a camping trip on the coldest night of the winter on the North Yorks Moors

When I bought my Discovery 2 from our Technical Editor in October it had covered 114,030 miles, now, a few months down the line, it's about to reach the 120,000-mile mark. This past week I have packed on 1000 miles. First there was the trip down to Dorset to visit the irrepressible Colonel John Blashford-Snell (which you can read all about it elsewhere in this issue). Then there was a laning trip to the North Yorkshire Moors. As I was going to be away for a few days on this assignment I decided to do the unthinkable and camp during what can easily be described as the coldest snap of the winter thus far. Some might call me crazy, but there is not such thing as bad weather, only bad gear. As I was on my own I decided to keep my sleeping arrangements simple and packed my ARB swag. It's a rather neat piece of kit; think of it as a one-man tent or bedroll. My swag was nothing like the simple one used by the poor fellow in the much-loved Aussie anthem Waltzing Matilda, mine was a little over-engineered but that is what you get when a company renowned for making lockers and bumpers produces a swag! The best thing about a swag is that it only takes a few seconds to set up. It does have a couple of guy ropes and poles but the main thing is getting the corner pegs in first and making sure that the base has been pulled tight. It was made for the single man on safari.

Before going into the details of the next critical piece of equipment that I used for

my night of camping in the snow please allow me to tell you a little story. When I was a young lieutenant in the South African army I did a mechanised infantry course in Bloemfontein. Despite the fact that it was July and winter, we were young, dumb and bulletproof back then. Part of the course involved sleeping in the field for a few nights. We had all packed summer gear and I only had a sleeping bag liner. Tents were not permitted and we had to sleep on the ground, temperatures plummeted to around -10°C degrees and let's just say I did not sleep much despite the fact that I was sandwiched between two grown men for extra warmth. I almost froze to death and spent the whole night praying for the sun to come up. I learnt a valuable lesson on those cold nights in the veld. Now I had come prepared for my night of camping on the North Yorkshire Moors and had packed the all-important Chrysalis 5 Snuggpak sleeping bag, it will

comfortably withstand temperatures of -15°C degrees and you won't die if it drops to -20°C degrees. It even had a built in torch in the hood. When I went to bed it was a beautiful starry night and so I stupidly left my shoes outside. Minutes after dozing off the rain, sleet and snow started. I slept through it all and did not wake until my alarm went off at 6am. My 2.2 metre sleeping bag had more than kept me warm; it was like sleeping in a toaster. As I unzipped the opening of the swag and lifted the flap, a little snow fell onto my sleeping bag. My shoes were covered in it and so too the grassy campsite. I don't know what the exact outside temperature was but my sleeping bag and swag had saved my life. Now the challenge was to pack it all away as quickly as possible before my hands and feet started to freeze. Soon all my gear was safely in the back of the Discovery and I was ready to rock and roll again. Sadly most people that own a Land Rover only do so because of the status it gives them, for enthusiasts like you and me, it's an extension of our lifestyle choice. This explains why we do crazy things like this. We are people who like to live life to the fullest and use our Land Rovers as tools of exploration and adventure. So what are you waiting for? Go out and do something crazy in your Land Rover, you boring old git. The thing I am enjoying most about Discovery ownership is that it's pretty comfortable if compared to a Defender, it has loads of packing space and there is nothing like the sound of Td5 engine. Especially when you fire it up at 6am in sub-zero temperatures.



PATRICK CRUYWAGEN
FEATURES EDITOR

DISCOVERY 2 GS

YEAR: 2001 MILEAGE: 120 000
ENGINE: Td5
POWER: 136bhp
TORQUE: 232 lb-ft MPG: 28

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HAMMOND FAMILY VALUES



One of the bugbears of winter driving is the muck thrown up off the road. It's worst in wet weather and particularly bad when you're following a lorry on a road shared with agricultural traffic. In rural areas you're constantly hitting the screen washer to sluice the crud off the windscreen – and topping up the washer reservoir on a weekly basis.

So when the washer pump failed on the Range Rover, something had to be done, quickly, so I phoned my mate and Land Rover maestro Nige Hammond. He had got a spare washer motor in stock, so I arranged to see him on Saturday morning.

Saturday dawned and, typically, it was a murky, damp day. The drive from Northamptonshire to Norfolk saw plenty of muck chucked up on the screen, but for most of the journey it was drizzling enough to lubricate the wipers – as long as I kept the screen cold. If the heater blast was directed at the screen, the muck dried instantly, which meant the drizzle wasn't enough to shift it. So Herbie and I shivered all the way to Nige's place and the steaming mug of tea proffered by Nige's wife Sally on arrival was very welcome.

Sally thanked me for the card I'd recently sent, which had made the local postman chuckle. I hadn't got their address to hand when I posted it, so I addressed it to "The Bungalow with Loads of Old Land Rovers Outside, Horningtoft, near Fakenham, Norfolk". Better still, it had arrived the morning after I'd posted it from Northamptonshire.

I spend a lot of time at Nige's place, swapping yarns and drinking tea. So much so, I have my very own Land Rover mug.



DAVE PHILLIPS
EDITOR

NINETY

YEAR: 1984 MILEAGE: 163,000
ENGINE: 2.5 diesel
POWER: 68 bhp
TORQUE: 113 lb-ft MPG: 30

DISCOVERY 1

YEAR: 1997 MILEAGE: 136,000
ENGINE: 300Tdi turbodiesel
POWER: 111 bhp
TORQUE: 195 lb-ft MPG: 25

RANGE ROVER

YEAR: 1993
MILEAGE: 143,000
ENGINE: 200Tdi turbodiesel
POWER: 111 bhp
TORQUE: 195 lb-ft MPG: 32

But more on that later.

It should have been easy to swap the washer motor on my 200Tdi Classic, but we all know that nothing is ever simple on a 21-year-old Land Rover. The washer reservoir is very accessible, situated at the back of the engine bay at the top of the bulkhead (nearside). But, typically, the motor was secreted in the most inaccessible place possible at the lower rear of the reservoir and the reservoir was secured by bolts in the inner wing and bulkhead that were too seized for penetrating oil to release.

Nige's angle grinder was called into action to grind them off in order to move the reservoir and switch that motor. Swapping the dud motor for the new one took less than a minute. Problem solved, I left the Hammond place, but arranged to meet them later for a bite to eat at a local pub.

There was a constant stream of lorries laden with sugar beet on the way over to Lynn's place, so the new washer motor got a thorough testing.

Besides the frontal assault from the traffic in front, all Land Rovers also get filthy rear windows from the muck chucked up by their own rear wheels. Land Rovers from the last two decades are invariably fitted with rear wash/wipers to combat this, but alas not older ones like my 1984 Ninety. I really will have to retrofit one, as it is impossible to see out of the rear window after a couple of miles of driving Norfolk's muddy lanes.

In the meantime, I busied myself fitting locking wheel nuts to both to the Ninety and Range Rover. With Land Rover thefts at an all-time high, it makes perfect sense – the wheels and tyres on both vehicles are as-new and very desirable.

To make life easier when dealing with wheel nuts, I do what the garages do and use an impact wrench. Although I have a compressor at home, it's not always convenient to use air tools – particularly today, 70 mile from home in Norfolk – so my recently-acquired CP3005 cordless impact wrench from Sealey is invaluable. The two 18v lithium ion batteries recharge from the mains in one hour and it supplies 650Nm of torque.

Of course, an impact wrench isn't just for wheel nuts: it's a great mate when you've got stubborn nuts to shift. But if you do invest in one, remember to invest in a set of impact sockets, too. Ordinary sockets can and will shatter under the immense forces generated.

Soon evening arrived and it was time to meet up for steaks and beer with the Hammonds at our favourite Land Rover pub, the Crown at Gayton. Lynn had a surprise for Sally, which she duly produced: a Land Rover tea cosy she'd knitted to thank her for that never-ending supply of steaming cuppas from the kitchen of "The Bungalow with Loads of Old Land Rovers Outside". Most which are probably drunk by me.



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IN PRAISE OF PETROL



This page:
Petrol-loving
members of the
Libyan 4WD club



T

he 2.25 engine of my Lightweight has served me well and is a joy to drive. Yet, over the years, I have received a fair bit of stick on its behalf.

"It's a PETROL?" one man asked incredulous. "I've always had diesels - SO much better." I've been advised to change the engine by well-meaning chaps, who proffer unsolicited advice despite me not complaining about the engine at all. Many have extolled the virtues of diesel engines, at length, and advised me to rethink my choice of Land Rover, or change the engine. I just have to whisper the word "petrol", and they're off. "REALLY? I thought all these old Land Rovers were diesel," another friend said, shaking his head and gazing at me with pity.

Even my octogenarian great aunt, pausing on a wooden box acting as a makeshift step for her to get into the passenger seat, said: "It's petrol, you say? Isn't that frightfully expensive, dear?" The idea of my Lightweight's petrol fuel system has caused distress for more strangers than its practical everyday usage ever has for me.

I have never owned a diesel vehicle but have driven a few. All have seemed sluggish to pull away and excessively noisy. I'm the first to admit that my Lightweight is far from quiet, especially at speed, but it produces either an endearing, upbeat kind of 'vroom vroom' or an obscure squealing of the overdrive. The deep headache-inducing drone of a diesel, however, is something that, for me, turns a long-distance drive into something akin to torture.

In Libya, one of North Africa's most

fascinating countries, I finally find myself amongst a group of enthusiasts who appreciate the petrol combustion engine as much as I do - a discovery I make hanging out near Tripoli port with a few members of Libya's first and only four-wheel-drive club.

"I had a Land Rover once - a single cab Defender TD, but I sold it because it was diesel," Naser Hwas, one of the club's founding members, tells me. My ears prick up, and I urge him to elucidate.

"I bought it for 10,000 Libyan Dinars (£5,000), spent another LD10,000 fixing the engine and it STILL didn't work properly," he says, shaking his head. The Defender, one of the first TDs in the Land Rover family, was used as Naser's works vehicle for his scuba-diving school. "A lot

of my English customers loved it. They would drive it around the beach and they called it 'Landy'. It was not a comfortable vehicle but it would go anywhere."

Constant trips to the mechanic meant that, after just one year, it had to go. "Diesel engines are hard to fix here in Libya because there are very few specialists," he explains. "If a diesel engine breaks, even when small things go wrong, we normally chuck it." Otherwise, an ill-running diesel vehicle becomes like feeding Moloch, a never-satiated god that consumes a great deal of time and money.

"I actually wasted LD10,000 because I sold it for what I paid for it, after spending all that money," Naser says laughing. "And the guy who bought it from me immediately put a V8 petrol engine in."

Of course, in Britain, it is the exorbitant cost of petrol that sends shudders of dread through every motorist but, in an oil-rich country like Libya, that is scarcely an issue.

"A full, 12-litre, tank for my Discovery costs LD12 (£6) and it does between 10-12 mpg, so I find it very economical," Land Rover enthusiast and fellow club member Yaseen El-Kanuni explains. "Diesel is cheaper here but, when you think about the noise and maintenance issues, why would you choose a diesel?"

Libyans are apparently not particularly keen on maintenance, something which, with my general disregard for upkeep, I can totally relate to. "There's something about the mechanism of diesel engines that means they suck in a lot of air," Yaseen explains. Even with a snorkel, they apparently pull in vast quantities of sand, clogging the air filter which then demands frequent attention. "This doesn't happen with petrol engines, and the air filters don't need cleaning so often," he says.

The country's dusty cities and vast expanse of desert mean that how vehicles deal with sand is a very real consideration. Whilst sand is hardly an issue for me in green and rainy England, it is a pleasure to be amongst bona fide fellow petrol-heads.



THOM WESTCOTT
CONTRIBUTOR

SHI LIGHTWEIGHT

YEAR: 1977 **MILEAGE:** Debatable, since the speedometer doesn't always work and I replaced the dial some years ago, inadvertently dropping several thousand miles off the clock.
ENGINE: 2.25 **POWER:** Quite a bit
TORQUE: Several lb-ft **MPG:** Vastly improved! 14-16 mpg is the optimum given in handbook, but I like to think I fare slightly better with the overdrive.

LRM'S FLEET

Every month, LRM staff and contributors share their real-life experiences with the Land Rovers they own...



DAVE PHILLIPS
EDITOR

1996 Discovery 300Tdi
1984 Ninety NA diesel
1993 Range Rover 200Tdi



PATRICK CRUYWAGEN
FEATURES EDITOR

2001 Discovery 2 Td5



ED EVANS

TECHNICAL EDITOR

1976 Series III 88 soft top
2000 Freelander 1 L-series
2000 Defender 110 Td5
2006 Range Rover Sport TDV6



THOM WESTCOTT
CONTRIBUTOR

1977 SIII Lightweight



ROGER HICKS

JOURNALIST

1972 Series III

TIME TO GO?



A measly, paltry £1500!" exclaimed Chrissie as she slammed the phone down in my studio and resumed the task of rubbing out the pencil lines on another batch of cartoons ready to be scanned.

Perhaps I should explain. Chrissie is my Girl Friday, although technically she would be better described as Girl Wednesday because that was the day she worked in the studio, making some degree of order out of the chaos the preceding week had produced.

She had two chocolate labs, not a medical condition, but the affectionate term for her two, massive dark brown Labradors who were her constant companions in the dark green diesel Freelander that she was now trying to part exchange with a local dealer.

Testimony to this dog transport was the heady mixture of mud, leaves, fur plus random unidentified objects that covered the Freelander's interior as a result of the long country walks her labs required.

She'd owned the Freelander from new, and in that time it had covered most of Europe taking her and her family (and her chocolate labs) on various holidays, but now it had to go.

The labs were not as young as they once were, so the effort of leaping into the back was becoming more difficult with each passing month. Lifting them in was never going to be an option.

In her sights was a VW Tourino or something similar, with a lower rear entrance, so being the gentleman that I am, I offered to take the Freelander "off of her" for the above mentioned paltry part exchange rate.

Fast forward five or so years, and the Freelander replaced my ageing Disco which I'd owned for 13 years and had covered 355,000 miles of relatively trouble-free motoring.

Obviously I was sad to see it go, but the snug leather interior, heated rear seats (now there's an interesting but weird sensation) and lack of

roll from the Freelander made the transition from the Disco that much easier.

And now, shock horror, it's time for the Freelander to "move on".

The rear window has seized up, the front passenger window likewise. The security system locks up if I park near anything electrical, three brake pipes have an MoT advisory, the windscreen has a growing crack, and the gearbox is making strange noises.

So, when it finally shuffles off this mortal coil, what next?

I started my driving life with a Series I, then there was the heater-less ex-RAF SWB truck cab, which was soon followed by a Series IIA Safari and numerous other Land Rover variants.

I'll also never forget the blissful moment when I made the transition and part-exchanged my Lightweight with its constant, shoulder-aching draughts to a V8 classic Range Rover.

So the Jury is still out. A late Freelander 1, an early Freelander 2, maybe another Disco, or perhaps be a bit retro in my motoring career and pick up a Defender? Or, and this is an off-the-radar thought, an all-singing, all-dancing ageing Range Rover? Not a sensible choice, and everyone warns me against being impetuous, but that's just what they were saying all those years ago when I picked up my first Series I.



IAN WEST
CARTOONIST

FREELANDER 1

YEAR: 2000
MILEAGE: Unknown
MPG: 35



Mark is reminded of his first forays with a Freelander

REMEMBRANCE OF TIMES PAST

I should come clean about this from the start – the picture above is not a recent one. It was taken in, I think, late 2000, when I took my then-new Freelander 2.0di along to a Land Rover press launch for the even-newer V6.

Part of the event involved driving across a seriously waterlogged field, and when all the official stuff was over I asked if I could have a go in my own vehicle.

I like this shot because it shows how well a Freelander can cope off-road. Mine was on regular road tyres and I don't remember actually getting stuck – although the illuminated reversing light in the photo suggests that some frantic rocking to-and-fro with first and reverse gears was in progress!

W594 KNP was a three-door diesel in Epsom Green – and so is my current Freelander, the one bought off eBay just before Christmas and introduced in last month's LRM. Considering it cost only £700, R617 BAC drives very well, and over the last few weeks I've been using it and working out what needs fixing.

What I'm really chuffed about is that R617 BAC is definitely a pre-production vehicle, built before the lines at Solihull were fully up and running. The first official production Freelander – now in the Heritage Collection at Gaydon – is chassis 677. Mine is number 377. I discovered this after buying a brand new copy of James

Taylor's excellent book *You & Your Land Rover Freelander* for all of a penny from Amazon. How do they do that?!

I was surprised to discover that R617 BAC doesn't have anti-lock brakes, electronic traction control or hill descent control. It's true that these were options but it's rare to find a vehicle without them.





MARK DIXON
CONTRIBUTOR

FREELANDER 2.0di

YEAR: 1997 MILEAGE: 135,000
ENGINE: Rover L-series
POWER: 96bhp
TORQUE: 155 lb-ft MPG: 36

Since R617 was owned by Land Rover for the first three years of its life, I'm guessing it may have been a management vehicle rather than a press demonstrator, because those were always very highly specced.

R617 does have the relatively rare Teal Blue 'Jungle' fabric, unique to early three-doors – pictured left in a contemporary press shot – and although it's grubby, it's all survived pretty well apart from the driver's seat, which has a couple of small holes in the squab. I'm desperately keen to find a replacement, so do email me at mark_dixon@dennis.co.uk if you can help.

Unfortunately, R617 has been converted to two-wheel drive by a previous owner. Removing the rear propshaft is a very common bodge by owners who don't want the expense of replacing a seized central VCU (viscous coupling unit), which typically only lasts 75,000 miles or so. The VCU is there because the Freelander was designed to have a front-wheel-drive bias, so front and rear diffs run at slightly different speeds – and when the VCU seizes, it starts to knock out one or both of the diffs.

I suspect that a rumbling noise from the back end of R617 means its rear diff is on the way out, so I'm on the hunt for a complete donor vehicle to obtain the parts. In an ideal world, it would be another three-door diesel with Teal Blue trim and a fully functioning 4wd system – but that may be asking a bit much.

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SFP000260G	1987 - 2006 & 2007-	Front
SFP000280G	1987 - 2006	Rear
STC1601G	1987 - 2006	Rear
SFP000250G	1987 - 2006 & 2007-	Rear
SFP000270G	1987 - 2006 & 2007-	Rear
LR032954G	2007-	Rear

Discovery

Discovery 1		
SFP500180G		Front
STC9190G		Front
SFP500160G		Front
SFP500190G		Rear
SFP500200G		Rear
STC9189G		Rear

Discovery 2

SFP500150G	Front
SFP500130G	Rear

Discovery 3

SFP500010G	Front
LR019618G	Front
LR019627G	Rear
LR055454G	Rear

Discovery 4

SFP500010G	Front
LR019618G	Front
LR021253G	Front
LR051626G	Front
LR021316G	Rear
LR019627G	Rear
LR055454G	Rear
LR015519G	Rear
LR055455G	Rear

Freelander

Freelander 1		
SFP100360G		Front
LR021899G		Front
Freelander 2		
LR004936G		Front
LR003657G		Rear
LR023888G		Rear
LR043285G		Rear

Range Rover

Range Rover Classic		
SFP500180G	1986 - 1994	Front
SFP500200G	1986 - 1994	Rear

Range Rover P38

SFP500120G	1994 - 2001	Front
SFP500130G	1994 - 2001	Rear

Range Rover L322

SFC500080G	2002 - 2009	Front
SFP500010G	2002 - 2009	Front
LR019618G	2002 - 2009	Front
SFP500070G	2002 - 2009	Front
SFP500210G	2002 - 2009	Rear
LR019627G	2002 - 2009	Rear
LR055454G	2002 - 2009	Rear
LR026221G	2010 - 2012	Front
LR020362G	2010 - 2012	Front
LR064181G NEW	2010 - 2012	Front
LR025739G	2010 - 2012	Rear
LR015519G	2010 - 2012	Rear
LR032903G	2010 - 2012	Rear

Range Rover L405

LR020362G	2013 -	Front
LR064181G NEW	2013 -	Front
LR036574G	2013 -	Rear
LR065492G NEW	2013 -	Rear

Range Rover Sport

SFP500010G	2005 - 2009	Front
LR019618G	2005 - 2009	Front
SFP500070G	2005 - 2009	Front
LR019627G	2005 - 2009	Rear
LR055454G	2005 - 2009	Rear
LR021253G	2010 - 2013	Front
LR020362G	2010 - 2013 & 2014 -	Front
LR064181G NEW	2010 - 2013 & 2014 -	Front
LR051626G	2010 - 2013 & 2014 -	Front
LR019627G	2010 - 2013	Rear
LR055454G	2010 - 2013	Rear
LR025739G	2010 - 2013	Rear
LR015519G	2010 - 2013	Rear
LR055455G	2010 - 2013	Rear
LR036574G	2014 -	Rear
LR065492G NEW	2014 -	Rear

Range Rover Evoque

LR027309G	Front
LR027129G	Rear
LR043714G	Rear

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IMPORTANT BRAKE INFORMATION

For exact change over points with vehicle applications please contact your local Britpart distributor with the full chassis number for the correct application. These references are intended as a guide only.



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Input - 14V = 1A

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Peak current - 600A

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Pack contents...



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DA1238



& charger for electronic products...



Technical Specifications

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Weight - 300g

Output - 5V = 2A

Input - 14V = 1A

Starting current - 200A

Peak current - 400A

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- > Charging cycles can reach more than 1,000 times.
- > Supports 12V jump starts as well as back up charging for many brands of mobile phones, tablets etc.

Pack contents...





WHY USING YOUR LAND ROVER IS GOOD FOR IT



There's a risk that our Land Rovers are not being serviced frequently enough, and it applies to old and new vehicles.

The prescribed service intervals are becoming longer for newer and recent models because of improvements in components and in the design life of consumables. Engine oil, for example, now has a longer life in the sump, not only due to improvements in oil technology, but also to cleaner fuel and cleaner burn characteristics in the combustion chambers themselves.

Transmission, steering and axle lubricants are now sealed for life, and antifreeze solutions last ten years. This all saves us money, but there is a downside which can actually cost us more in the long term.

Less frequent servicing means less frequent inspection, with less chance of spotting deteriorating parts before they actually fail. It can lead to an unexpected MoT fail, unplanned vehicle downtime and urgent repair costs.

Surveys suggest that drivers in general are using their vehicles less. But the average yearly mileage of privately-owned vehicles is only around 8000, so routine servicing on a mileage-only basis becomes further delayed.

Of course, there's a time factor built into the service schedule too, say every 12 months, but if the vehicle is little used, there's a reluctance to pay for an expensive service each year.

Older classic Land Rovers that only come out of the garage occasionally can deteriorate while standing unused

– electrical connectors corrode, parts seize, seals dry out, oil drains from critical engine parts – while exhaust systems, chassis and bulkheads continue to corrode from the inside. A friend has just returned his Defender 300Tdi to the road after three months in storage. Before storage, it was running perfectly, now it's overheating and the clutch is failing.

Vehicles, especially Land Rovers, are built to be used, and driving them helps to keep them in good working order. Regular and timely servicing remains vital for dependability, and an additional six-monthly inspection (ideally mid-way between MoT tests) helps to plan for upcoming repairs.

TECHNICAL EDITOR

ED EVANS

lrtechnical@gmail.com

“Before storage it was running perfectly, now it's overheating and the clutch failing”

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Ed Evans explains what's involved in replacing a Td5 110's crumbling rear crossmember



PART 2

DEFENDER REAR CROSSMEMBER: REBUILDING

In the last issue we took a close look around the Defender's crumbling rear crossmember, then set about removing it, ready to install a new repair section. It's a sizeable job for several reasons:

- The main chassis side rails are usually corroded just forward of the rear crossmember, so these sections also need to be replaced because otherwise, there would be no good metal to weld on to. For this reason, we're fitting a rear crossmember with integral extension legs which replace the rusted rear ends of the main chassis sections.
- The main wiring harness to the rear of the vehicle passes inside the main right hand chassis rail, so this has to be disconnected and pulled through before the rear of the chassis can be cut off.
- And on later models and earlier long wheelbase variants, the rear-mounted fuel tank has to be removed to gain access to cut the chassis and weld everything safely.

All of this work was completed in our March issue. Now we rejoin Steve Grant in Britpart's development workshop to install the new rear crossmember and rebuild the back end of the vehicle.

As we explained in the first installment, with the rear crossmember being such a

substantial and critical replacement part, the quality of welding needs to be first class, not only to retain the chassis frame's original strength, but also to resist the forces imposed on it by the towing gear which is bolted directly to the crossmember and to those new rear chassis extension legs.

ED EVANS

■ Parts: Rear crossmember 110 Td5 'long leg', Britpart number DA4374

TIME	COST
6 HOURS	£260

DIFFICULTY RATING



Here is the rusted original rear crossmember (fuel tank out), also showing holes and old patches on the main chassis sections.

> FITTING THE NEW CROSSMEMBER



1 After cutting the crossmember and rear chassis (March issue), we're left with two stubs on the main chassis, which the new assembly slides on to.



2 The new crossmember (Britpart DA4374). Open ends slide over chassis. Raised frames are Td5 body supports. Cross-strut is temporary.



3 With the rear chassis now cut away, the length of the repair section is accurately marked from the rear body edge to the chassis.



4 The exposed ends are carefully marked all round and a final accurate cut made with the angle grinder and cutting disc.



5 The cut ends are then cleaned up and all surface rust ground off the outside to help achieve strong and clean welds, which are worth doing well.



6 Paint is cleaned off the repair section's open ends which slide over the chassis, so as not to contaminate the weld with foreign material.

WORK SAFELY

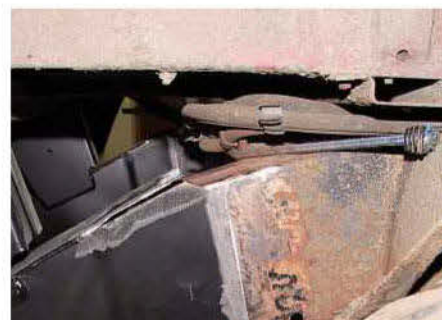
- When using an angle grinder with a cutting disc, wear thick gloves and a strong visor. Be aware of the machine's tendency to twist in your hand, and to kick back.
- Extract as much fuel as possible from the tank before removing it, and mop up any spillage.
- If working from the floor, ensure it is firm and level and that the vehicle is fully supported and remains stable.
- Two people, or a support jack or trolley jack are needed to lower the cumbersome fuel tank and its support plate.
- When welding, wear flame resistant overalls, welding gloves and a good quality visor. Beware of hot material falling when working overhead.



7 Before the new section is tried in position, the separate cross rail with rear body mounting flanges is bolted on, to ensure everything lines up.



8 The trial fit looks good. The open ends slide snugly over the existing chassis, and the rear flanges align with the rear body bolt holes.



9 But on the right side, the top of the repair section is trimmed back slightly to keep the weld away from those fuel pipes above.



10 Now supported on blocks, with the rear lightly bolted to the body, the open ends are clamped and tapped to the chassis, and tack welded.

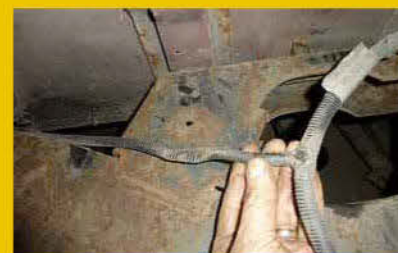


11 The rear body flange bolts are tightened after checking the new rear crossmember is perfectly aligned with the body on each side.



12 Contact points between the body and the body support structure on the chassis are checked. Thicker rubber pad will fill this slight gap.

WORTH CHECKING



STEVE noticed the wiring harness to the fuel filter's water sensor was trapped between the body and chassis, possibly from new. A crow bar helped lift the body enough to pull the harness free. Here it is, freed but flattened.



13 The repair section is finally secured by tightening the flange rail bolts using a socket and extension up through the crossmember.



14 With the repair section held by rear bolts and front tack welds, the top and outer sides of the joints are welded from the wheel arches.



15 Then the insides of the chassis legs and the underside are tackled from underneath the vehicle to complete the welding.

RECONNECTING THE ELECTRICAL HARNESS

IF YOU want to be authentic by putting the main wiring harness back through the chassis, simply feed the tug wire through the new chassis section before welding, and use it to pull the harness back through later. But this is difficult because there will be an internal step inside where the old rear section was cut off. Routing the harness on top of the chassis is easier, quicker, and more practical.



When pulling the harness out of the chassis (March issue) we attached this tug-cable to it in case it snagged.

“Remember that quality welding is essential when undertaking this work”



16



17



16 New section is fully welded along the sides, top, bottom, and along the split corners fusing the welds through to the chassis.

17 Several protective coats of paint are added. Tow gear bolt holes are greased, and the steel band over the top of the fuel tank is in position.



EXTRA REPAIR

CAREFULLY check everything that becomes accessible when the fuel tank is removed. In particular the next chassis crossmember moving forward. This section butts up to the front of the fuel tank and corrodes badly, so it's worth checking and repairing while the tank is out.



The crossmember corrodes along the bottom of this rearmost edge, and along the underside shown here.



After cleaning back to sound metal, Steve forms an angled plate and tack-welds it into position.

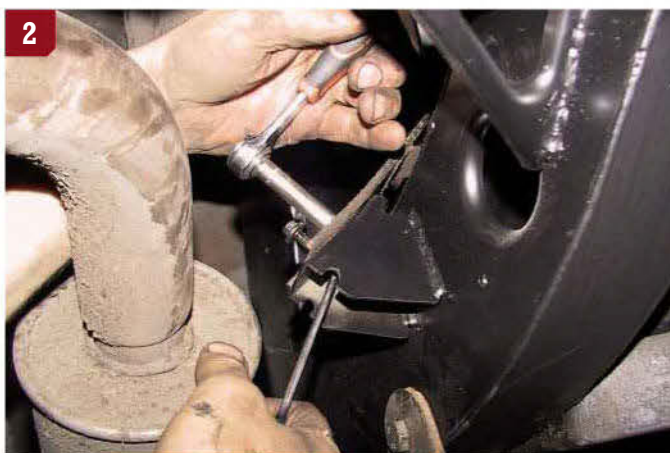


Continuous MIG welds along each seam provide a strong joint, restoring rigidity to the crossmember.



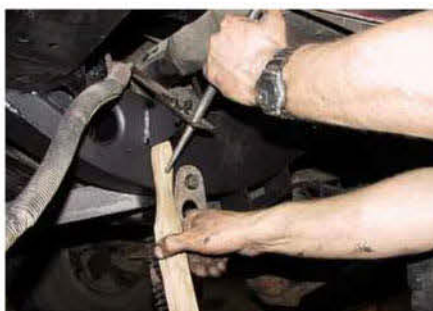
Drain holes are drilled underneath at each end of the repair plate. Water can get in and may need draining out.

> REBUILDING THE VEHICLE

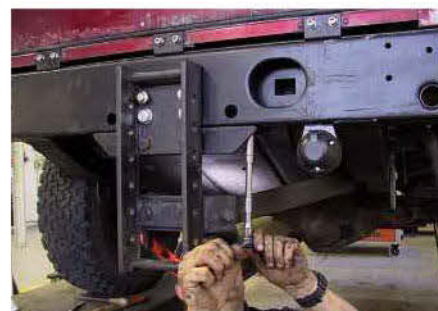


1 Fuel tank and its support plate are installed, simultaneously fitting the fuel pipes and harness to these connectors on top.

2 When the tank is in and central between the chassis rails, the steel strap is bolted to chassis bracket on one side (left here).



3 Then the strap is bolted to the chassis bracket at the opposite side. Toggle bar stretches it down to align the bolt holes.



4 The tow gear is bolted on, having first loosened the two lower arms to enable them to be aligned with the forward chassis bolt holes.



5 Wiring is reconnected. We secured the main harness along the top of the chassis rail, rather than inside it, dipping down for this outrigger.



6 Here, it heads under and up to the bulkhead. This routing means it's accessible for repair/test, and easily moved for future chassis weld repair.



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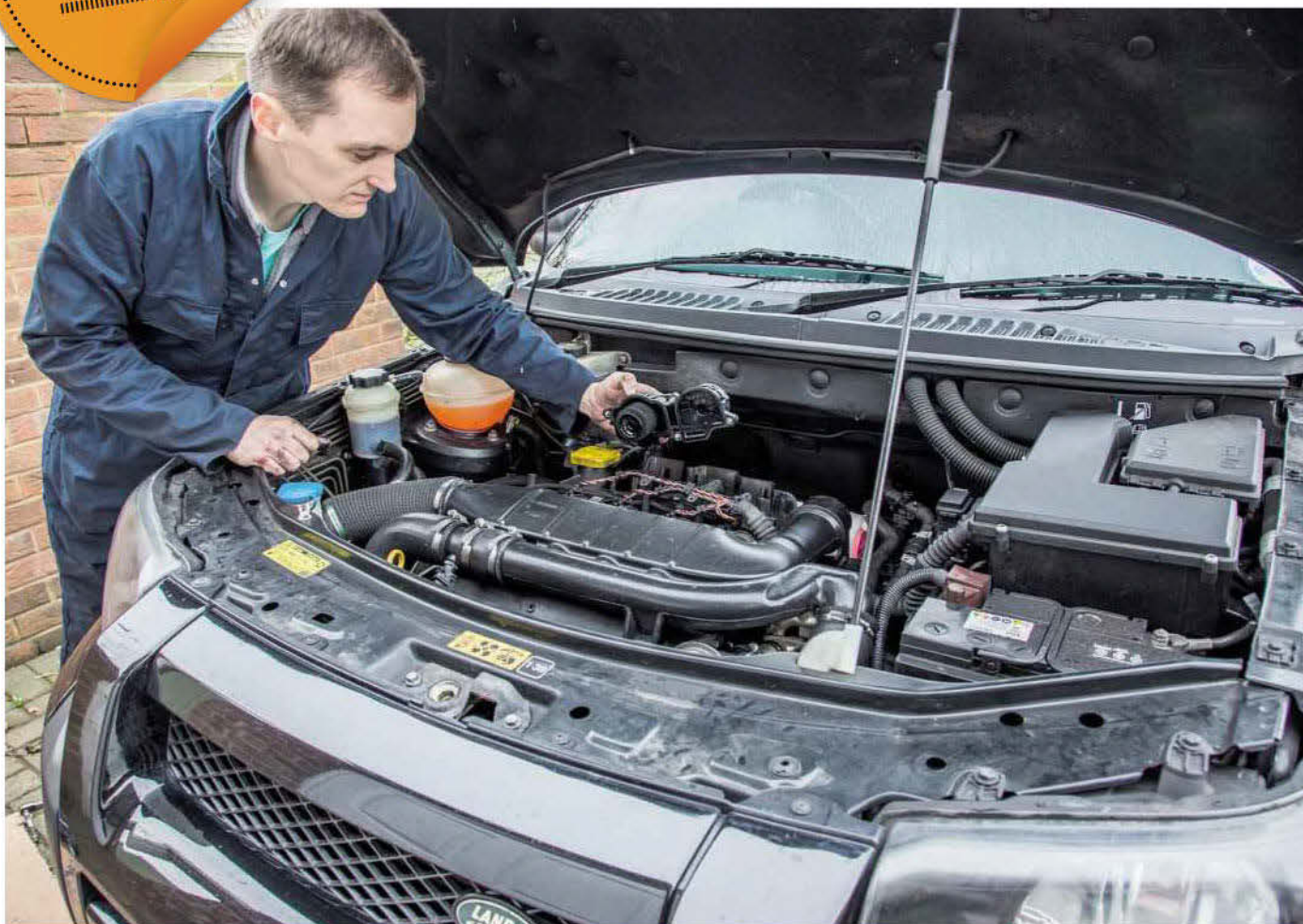
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{FREELANDER Td4 AND RANGE ROVER Td6}

CRANKCASE BREATHER VALVE

There's a simple service mod to help your Freelander Td4 or Range Rover Td6 breathe more freely and efficiently, says Alisdair Cusick

The Freelander 1's BMW-sourced four-cylinder Td4 diesel engine is a simple motor to service yourself, as we saw in our service guide last month. In many ways, the top-mounted oil filter and the easily-accessible air filter mean the hardest job is removing the numerous fittings to enable the engine sump guard to be removed, just to access the sump drain plug. One small service job that often gets overlooked though, is the crankcase breather element. This breather system is also fitted to the Td6 diesel in the early L322 Range Rovers introduced in 2002, so all this applies to both vehicle types. Correctly called the Positive Crankcase Ventilation (PCV) element, its job is to

catch any oil in the breather system, and return it to the engine, thus helping to reduce emissions. Although the Td4 and Td6 systems are relatively sophisticated, the idea has been around since the 1960s, when the breathing systems of engines were identified as a major source of hydrocarbon emissions.

Until then, engine breather pipes simply vented to the engine bay, and from there directly into the atmosphere.

By fitting a PCV, hydrocarbons were reduced, and the engines ran cleaner, aiding oil life and engine health. Hence, since the early 1960s, PCVs appeared as a common fitment.

On Land Rover and BMW service schedules, the breather wasn't mentioned as an item to change until 2007, when BMW realised the significance it played in

**ALISDAIR
CUSICK**

■ Tools needed - 5mm Hex socket, 3/8 ratchet and wobble/extension bar, 8mm socket, 6mm socket

TIME**45
MINS****COST****£63.95****DIFFICULTY RATING**

the long-term health of the engine. From then on, it was noted to be renewed every 12,000 miles, but by then, the earliest Td4s were heading for six years old. The original filter, shared with the Range Rover application, was a simple foam cylinder. This could be rinsed in petrol to clean it, or ideally, replaced with a new one. But on many vehicles, this task was overlooked. Over time, the foam filter could block up, causing pressure to build up in the engine crankcase, which then looked for the easiest way out.

That increased running pressure could cause turbo issues, poor running, exhaust smoke or, if the dipstick was removed when the engine was running, much of the oil spewing out from the dipstick tube as the only outlet for the built up pressure! Should the turbo seals fail, and oil reach the air intake, the engine could run on its own oil - usually to self destruction. If you were quick enough to notice this was happening, then forcing the engine to stall, or blocking the air intake, were the only ways to prevent terminal damage.

Fortunately, replacement is one of the easiest tasks, requiring only a few tools, and around 45 minutes. The cheapest option is to replace the foam filter for around £15, but BMW later designed a modified internal for the PCV, consisting of a cyclone oil separator. With this, there is much less to clog or fail, so it's good for

the duration of three routine oil changes according to BMW, compared to 12,000 miles for the foam original.

The Td4 and Range Rover Td6 both share similar PCV arrangements, as you'd expect when both engines are broadly the same - the 3.0-litre Td6 is pretty much the Td4 with two extra cylinders and no variable vane turbo - so this simple task applies to both engines. On a Td6, there's a little more wiring to move, but it is still very straightforward.

You need to go to a BMW dealer or parts supplier, and order it from the part number alone. There's no Land Rover reference. It is possible to buy just the modified BMW oil separator - Part No 11127799367 - for around £24, but you can also buy the separator and a new PCV cover - part No 11127799224 - for £63.95 The cover does house a small hidden spring-loaded valve, which should strictly be cleaned. But to my mind, for the extra money, it is worth replacing it at the same time to keep your vehicle in tip-top condition.

A useful by-product of the change is a subtle improvement in performance; this 2006 Td4 Freelander definitely felt more willing to rev with the new parts giving a better-breathing engine. This is an easy DIY job, whether you are cleaning the standard filter element, replacing the standard breather, or fitting the BMW part shown here.



1 Start by removing the inner plastic intake cover. An 8mm socket and three bolts to undo, then ease it off forwards as shown.



2 Next, do the same for the rear air filter cover. This time there are five Hex bolts (5mm), and the oil filler cap to remove.



3 Remove the two bolts hidden down the back, one at each side. A small extension or wobble bar on the ratchet is just the job.



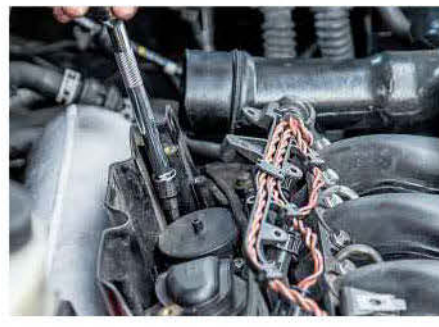
4 Cover removal is tricky. Ease the pipework away on the right hand side, then angle it like this, to clear the intake pipe on the right.



5 At this stage, immediately replace the oil filler cap. Debris falling in there will definitely not help, especially a dropped bolt!



6 Undo three security bolts on the wiring loom mounts, and move it clear (6mm socket will turn them if you're careful, they aren't very tight).



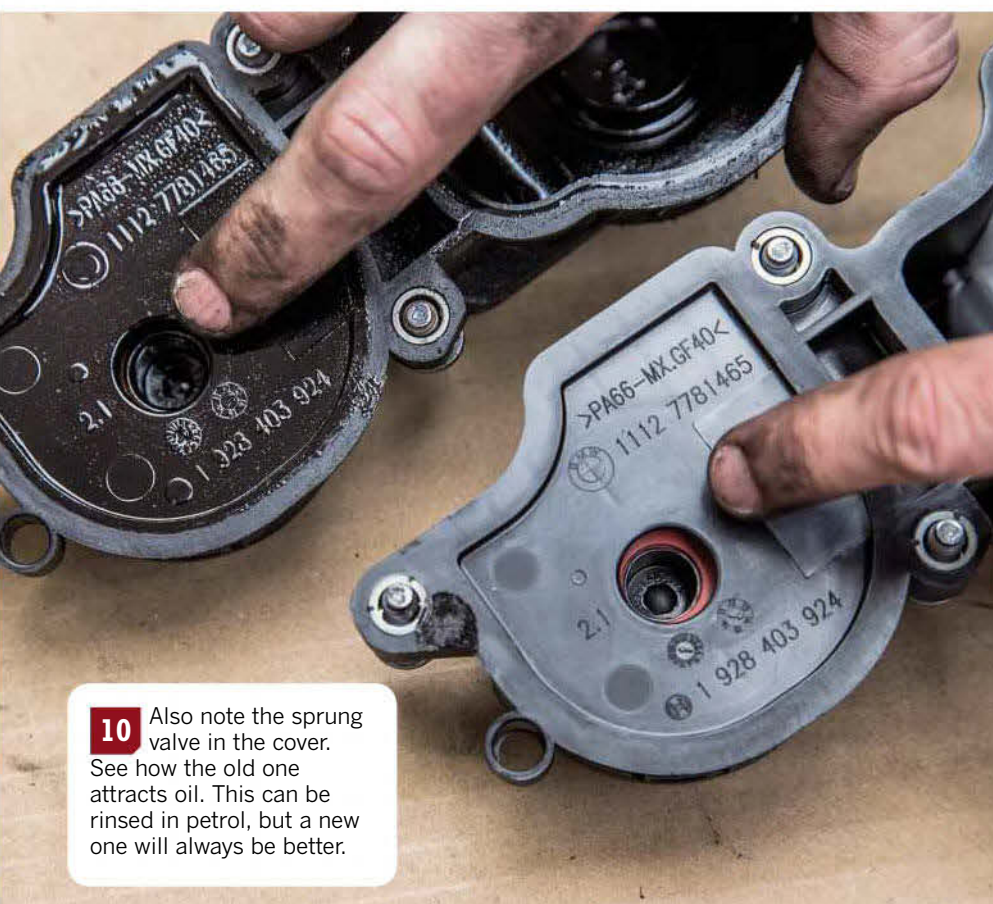
7 The PCV cover is then exposed, between the air filter and the injectors. Remove the four Hex bolts, with a 5mm Hex socket and ratchet.



8 Prise the cover off, and lift it out. The existing filter will come away with it, along with a small fixing arm. Take care - this can easily fall off.



9 New BMW oil separator and cover is on the left, and the old filter on the right. This one isn't too bad, but it is definitely due a change.



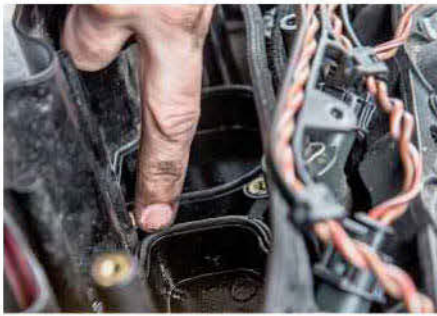
10 Also note the sprung valve in the cover. See how the old one attracts oil. This can be rinsed in petrol, but a new one will always be better.

WORK SAFELY

- Wear barrier cream or gloves to protect skin from oils.
- Allow the engine to fully cool before working on it.
- Wear eye protection if cleaning parts with a brush and degreaser.
- Avoid parts falling into the engine (refit the filler cap as suggested).
- Carry out such operations in a well ventilated garage or workshop.



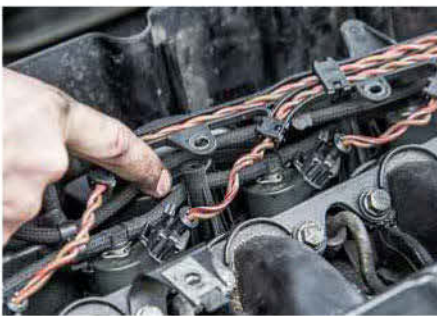
11 Remove the two old seals in the engine housing. BMW conveniently decided to fit neat tabs to aid grip for simple removal.



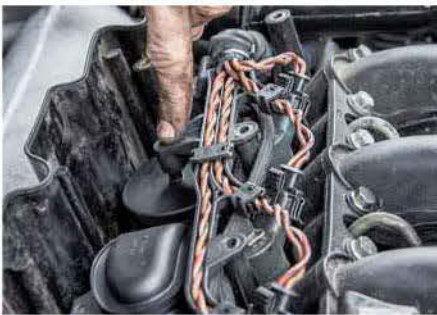
12 Clear any debris and refit the two new seals, supplied with the oil separator and cover. Locate them into their recesses.



13 Drop the oil separator into the new housing and push down (it only goes one way), then lower the assembly into position on the engine.



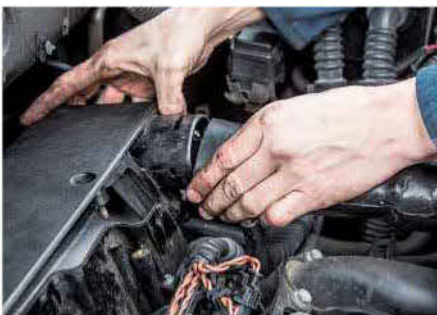
14 Clearance is tight on two small hoses by the injector loom. Have some patience, and with care the cover can be eased past them.



16 Locate the injector wiring loom over the top of the PCV cap, then refit the loom's three security screws, taking care not to burr the heads.



15 Push it down to ensure it locates without pinching any wiring/hoses, then re-tighten the four Hex bolt fittings for an airtight fit.



17 Remove the oil cap and refit the tricky air intake cover and Hex bolts. The right hand feed into the engine intake is the most difficult.



18 Refit the inner plastic engine cover. It helps to remove the bolts on this one, to help feed the rear lip under the air intake cover.



19 Finally, refit the three 8mm bolts. The left hand one goes into the crankcase: if you get a slight oil leak here, this one isn't tight enough.



Condensation inside the distributor cap could be a sign of water in the crankcase

SERIES III'S HOT START ISSUE

Q I have a problem with a Series III 2.25-litre petrol engine which has a Zenith carburettor. When the engine is cold in the early morning, summer or winter, it starts at the turn of the key. When left for 20 minutes or even an hour, it is difficult to start. Could you please give me some idea as to where the problem lies?
M Warner, Hereford

A There are quite a few potential causes. First have a look inside the distributor cap when the engine has been run and refuses to start. If there is condensation on the inside of the cap, wipe it dry with a tissue and try starting again. If this is causing the problem, the moisture may be getting in from the crankcase, perhaps due to a minor leak on the head gasket, especially if you are needing to top up the coolant. Otherwise, try renewing the spark plug leads, and especially the HT lead between the coil and distributor cap. If these are old they may be breaking down when hot. The

condenser might also be failing, often evident by signs of burning on the distributor points.

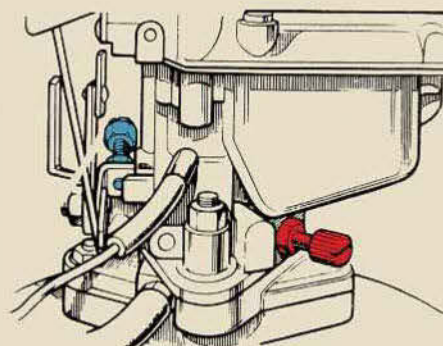
There is unlikely to be a fuel vapourisation problem, unless the pipework to your carb has been re-routed too close to the manifold or the engine, but it's worth checking.

On the subject of fuel, does your engine start when cold without using choke? If so, your carb may be set too rich, in which case it's worth resetting the mixture. This should be done after confirming the valve clearances and ignition timing are correct, and with the engine brought to full working temperature. Set the idle speed between 500-550 rpm using the throttle stop screw, then turn the idle mixture screw in or out to obtain the highest engine running speed. When the mixture is correct, turning the screw either way from this position will adversely affect the engine speed and smoothness, so if you find this happens right away, you can assume the mixture was correct. Before turning the screw, note its position and count the number of

turns and the direction, so that it can be returned to the original setting if that's necessary afterwards.

If you alter the mixture, the idle speed may need to be brought back into tolerance, then re-check the mixture. You may need to keep alternating like this to attain the correct idle speed and mixture, because each can affect the other.

Ed Evans



Zenith tweak-ability: idle speed control screw (blue), and idle mixture control, which sets the mixture throughout the range, (red)



BUYING A GOOD NINETY

Q I'm very close to buying a 1984 Land Rover Ninety short wheelbase County Station Wagon with a 2.25-litre petrol engine in it. I'll be viewing it soon. The chassis appears to be sound and it's got 90,000 miles on the clock and has had two owners. Please can you help me with buying advice, etc.

It's had no modifications other than a front bumper with winch, and spot lights and some roof lights. It will be my first Landy, and it's taken me 36 years to save up the money.

What do I need to look out for? Do I need to use leaded fuel replacement? I have read *LRM's* January issue about the petrol engine and, as I live on the edge of the low emissions zone and can't afford a newer compliant diesel, I think it's a good choice. I've even managed to convince my wife it's a sound investment.

Rob Eames

A This is a good vehicle to go for. The 2.25-litre (five main bearing) petrol engine is very smooth and quiet, even in old condition. There won't be a great deal of performance to be had, but it is certainly adequate for the job. The engine will be fine for running on unleaded fuel unless you are doing a lot of motorway or dual carriageway miles at high speed, or a lot of heavy towing.

Prolonged hard use can result in valve seat recession and you will notice this happening because the valve clearances will be tighter at each service when you check them. If that is happening regularly, consider fitting an unleaded head.

There are two main areas to check: the chassis and the bulkhead. The condition of the rest of the vehicle will be easily apparent and you need only make the usual car-buying checks such as confirming all the gears work (including low range and diff-lock), that the clutch does not slip, and that the engine does not overheat or produce smoke over a four mile test drive, which gives it time to warm up.

Examine every part of the chassis using a light hammer. Any parts that don't ring, but produce a dull thud, are likely to be badly rusted. Start with the rear crossmember, checking all over it, then work along each chassis main section checking the inside, outside, underside and on top. Test all outriggers and crossmembers as you work your way along the vehicle.

Check the bulkhead bottom mounting brackets which are bolted to the chassis, then work your way up the A-posts and check the areas around the bulkhead's front opening vents, especially between the vents and the A-post.

Chassis sections and new complete chassis are available. And bulkhead repair sections and new bulkheads can be bought too.

But, if you're paying a decent price, you want to have a good chassis and bulkhead, and good mechanical condition all round, even if it is a rather desirable County Station Wagon. I hope it works out for you, it's certainly a good specification vehicle.

Ed Evans



DISCO 2 BRAKE BLEED

Q I am not getting any pressure at the brake pedal on my 1999 Discovery 2. I used my Lynx diagnostic tool to power-bleed all the callipers, but it has not made any difference. I recently bled the clutch (same fluid reservoir) which feels fine. Any help appreciated.

Harvey Allen

A Have you bled the brakes manually before starting the power bleed with Lynx? The power bleed for this vehicle can be a one-man operation, though it is always better with two people.

The first part of the bleeding just activates the valves in the ABS modulator and purges any air in there.

The second part powers the ABS pump while you open each corner valve in turn as instructed by Lynx, and it will pump the fluid through.

Check the reservoir and top up the fluid if needed between working on each wheel. You can repeat the brake function as many times as is needed but, if the pedal still feels incorrect, then there may be another fault with the brake system.

The operation may have caused a problem in the brake master cylinder if seals have deteriorated. It can be caused by dirt from the reservoir getting into the master cylinder and system, especially if the fluid is old.

The manual bleed method (which can't be used if you've replaced the modulator) starts with the front left wheel, the front right, the left rear, then the right rear.

For each calliper, the pedal needs to be pressed five times and held down while someone opens the bleed nipple. Then let the pedal rise naturally.

Repeat this until air-free fluid emerges, then tighten the nipple while the pedal is fully down.

Ed Evans

POWER STEERING CONVERSION



A power steering conversion needs care when assembling all components correctly. New or reconditioned parts are always preferable for safety and reliability

Q I plan to convert my 1986 ex-military Ninety to power steering, and have sourced a steering pump and a mounting bracket. I still need a power steering box, and there seem to be three different types available – three, four and six bolt. Are these interchangeable and, if so, which is the best one to go for?

N Devlin, via email

A “Three, four and six bolt” refers to the number of bolts holding the top cover on to the box, and it is the easiest way to tell the different types apart. All three types of box will physically fit the

mounting points on the chassis, and the splines on the input shaft (where the steering column shaft connects to the box) are the same. The three-bolt box (Adwest Heavyweight) is the oldest of the three and it uses Imperial threaded pipe unions. Four-bolt types (Adwest Lightweight) and six-bolt (Gemmer) boxes use the same metric threaded unions. The three and four-bolt boxes share the same drop arm, but on the six-bolt box the drop arm is different. Three and four-bolt boxes are mounted with bolts screwed directly into the body casting. Three-bolt boxes have UNF bolts, and six-bolt boxes use long UNF bolts and

nylon lock nuts.

All three types were used on the Ninety, One Ten and Defender range at some time, and there are no specific weaknesses that I know of that might make you choose one over the others. Unless you are buying a brand new box outright, or planning to use a second hand box, you will need an old one of the same type to send back as an exchange unit, and four-bolt boxes tend to be easier to find because they were standard fit on the Discovery 1.

If you plan to re-use the drop arm from your old manual box, there are two types. The Adwest manual box (secured by bolts screwed into the body casting) has the same drop arm as the three and four-bolt power boxes. The Gemmer box (secured by long bolts and nylon lock nuts) shares its drop arm with the six-bolt power box. Given the difficulty of removing the drop arm from the old box, I'd be inclined to buy a new one because they are not especially expensive. In which case you can use whichever type of box you can find a cheap exchange unit for, together with the appropriate pipework.

The two bolts which secure the cast tie bracket to the box will need to be changed as they are much longer on manual than power boxes. Ensure that you use new locktabs on the chassis mounting bolts, with washers between the locktab and the chassis.

All the nylon lock nuts should be replaced with new. The bolts can be re-used if in perfect condition and of the correct type for the new box, but I would strongly recommend replacing them as well to finish the job properly.

Richard Hall



The door latch is easily reached after removing the door card and carefully peeling back the polythene condensation barrier

DISCOVERY 2 UNLOCKED

Q I have a 2004 Disco 2 auto and like Stephen Haywood, (in *LRM Classic Q&A* March 2015) I have a central locking problem. My key-fob does not unlock the driver's door with the first click as it should do, but unlocks the other doors and tail gate with the 2nd click of the fob. So I have to open the driver's door with the key when all the others are unlocked. However, it locks them all with the key-fob! I can hear the electrical system trying to lift the driver's door lock when I press the fob.

Martin Hudson

A Based on the description, I would suggest the actual internals in the door latch are faulty, even though you can hear something happening in the latch. As it is a sealed unit, there is no repair apart from replacing the latch assembly. **Duckworth Land Rover**



The D3's transfer box with centre diff is built by Austrian Magna Steyr (which produced Freelander 1's IRD transmission). Here, the centre diff, epicyclic high/low gears and multi-plate clutch are integrated in a superb single assembly

DISCO 3'S DIFF-LOCK DILEMMA

Q My 2008 Discovery 3 automatic has suddenly decided to have a problem at slow speeds when reversing or going ahead with half to full lock on in both directions. It feels as if the vehicle believes that one wheel has lost traction or is spinning faster than the other, and applies the diff lock to compensate. This is occurring at the rear diff. When it happens, you can feel the car juddering as the lock apparently drops in and out. The vehicle has been jacked up on one side with the front, and then the rear wheel, being free to rotate, with the gear in neutral and ignition on. Both wheels, when checked individually, were able to move freely while the opposite wheel was on the ground, and the two propshafts moved with no problem. I believe this eliminates any mechanical problem, leaving a possible electrical gremlin. Have you any ideas?

Ian Sparks, Colchester

A I have come across this symptom before, and there are a few things to check and carry out:-

- 1) All tyres need to be the same size and tread pattern – this sounds logical, but it is surprising how many we find that are different
- 2) Carry out a fault code read, and check for any transmission-related fault codes
- 3) Jacking the vehicle up and checking the drive train, as you have done, would suggest this is all okay, but be certain there's no damage to CV joints or other axle components
- 4) Finally, the transfer box's centre diff is electronically controlled and there is a set-up and calibration procedure that can be carried out using the diagnostic equipment. The process needs to be followed correctly because, if the calibration is wrong, it will not allow the centre diff to function as it should, giving various drive train symptoms when driving slow and in lock.

I hope this resolves the concern.

Duckworth Land Rover



DEFENDER TDCI SOUND EFFECTS

Q I have been an *LRM* subscriber for many years and have gained a lot from reading it. After reading your article in issue 196 about the 2.4 and 2.2 Ford engines used in Defenders, I am hoping you might be able to help me. Last May I bought a Defender 90 CSW 2.2TDCi. Since new, it had a strange engine noise like a bell ringing loudly and, on occasions, like the extreme pinking on an old petrol engine. This only occurs with the engine at working temperature and low speeds of 1000 to 1800 rpm, and when pulling away or accelerating. It does not happen all the time, but more often than not.

Your article said the most common fault with these engines is the EGR valve and that if the EGR valve is faulty you will hear it when you shut the engine off. My engine sometimes makes a series of 'eek eek' noises as it's shut down, and a slight chuffing noise on light overrun. I have taken it to the Land Rover dealer four times and they have always said that either they can't hear it, or it's normal. The dealer has upgraded the engine map to the latest version, but this has not fixed it.

I have borrowed other peoples' Defenders with the Ford 2.2 engine in and I have never been able to get these to make the same noise. Have you, or any of your technical people, any idea how to fix this? I am sure that it will eventually damage my very expensive engine.

Andy Saunders

A As always, noises are the most difficult to advise on because one man's rattle may be another's knocking. It is always best to hear the noise first hand.

That being said, I have spoken to a few people here and there are a couple of things to consider.

- 1) There is an engine lifting bracket at the rear of the engine that comes loose and then rattles against an air conditioning pipe; it does then cause strange noises
- 2) Similarly, there is a bracket that prevents the intercooler pipe touching the steering box, that also can cause noises
- 3) On a couple of occasions we have also seen the faces on the rocker arms start to break up. However, this will cause more of a tappet-type of noise.

With Reference to the EGR, the 'eek eek' noise on shut down is perfectly normal. It's the EGR valve going through a full cycle of the valve to self-clean, preventing it sticking.

The slight chuffing on overrun is a result of the throttle butterfly which is fitted in the induction system. This type of noise is normal in operation, and is more noticeable if driven with the window open.

Duckworth Land Rover

DISCO 2 PINION SEAL

Q I'm in the process of replacing the front differential pinion oil seal on my Td5 Discovery for the third time. I have taken the propshaft flange off and the seal is out and I have bought a Genuine Land Rover oil seal this time in the hope it doesn't fail again.

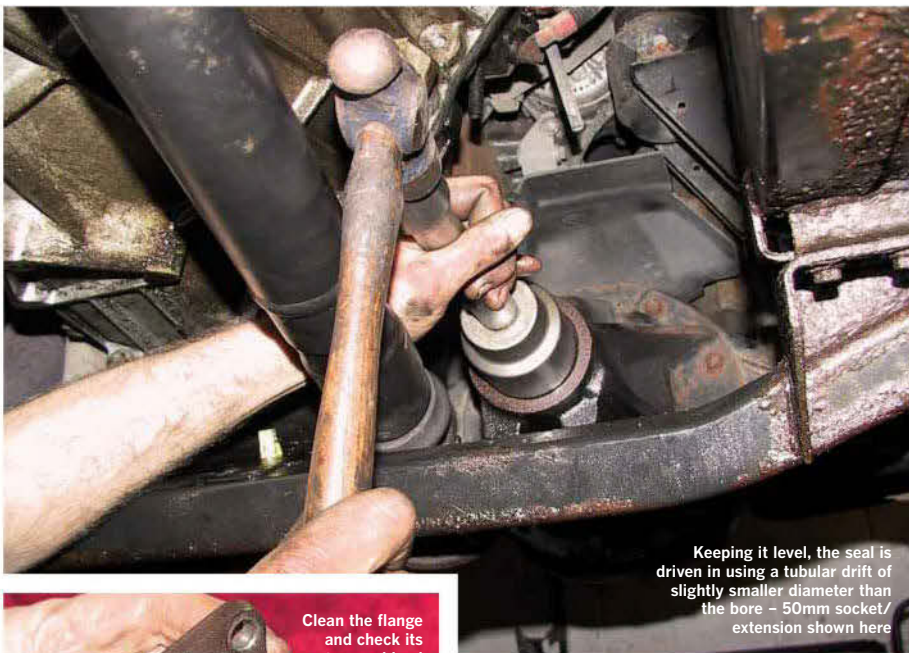
I want to make sure it is fitted correctly this time. Previously I have gradually punched the seal home keeping it as level as possible. Do you have any tips on how to do this so that I do it correctly?

Mike Lanbert

A Oil seals do need to be fitted correctly. But first, examine the machined external diameter of the diff's pinion flange, between the dirt shield and the splined bore, to see if it is damaged. The new seal's inner lip contacts this surface and, if the surface has any marks from indentations, scratches or corrosion or, more commonly, circumferential scoring, then it is likely to damage the lip of the seal very quickly. This may have happened with the two replacement seals that you have already fitted. So check this first and unless that surface is clear, fit a new flange. Sometimes the old seal cuts a circumferential groove in the surface that allows oil to leak past, and the same will happen again if the damaged flange is refitted with a new seal.

The flange, and the bore of the diff casing into which the seal fits, should be cleaned and the bore surface, too, should be checked for damage. Before fitting the seal, smear clean differential oil around the outside and around the inner lip.

There is a special tool available to fit the new seal. The important thing is to



Keeping it level, the seal is driven in using a tubular drift of slightly smaller diameter than the bore – 50mm socket/extension shown here



Clean the flange and check its outer machined surface. Renew it if it is damaged or grooved, or it will destroy the new seal's lip

ensure it is entered squarely and that it stays level as it is pushed in. Instead of the special tool, you can use any rigid hollow drift that has an outside diameter slightly smaller than the bore, and an inside diameter that clears the pinion

shaft. A 50mm or 52mm socket (size depending on the make of socket) is usually about right. Press this against the level seal after it has been entered, and tap the seal in carefully using a medium hammer on the socket. It's often easier to fit an extension bar into the socket. Take it slowly, checking the seal is level all the time. You will know when the seal is fully installed by the change in the impact sound. Don't overdo the driving, or you will distort the seal. Fit the flange, tapping it in, then fit the bolt and washer and tighten to 100Nm.

Ed Evans

HEADS ON THE BLOCK



This 2.5-litre head was actually fitted to a 2.25-litre engine in a very pretty Series III. It did not run well

Q The 2.25-litre diesel engine in my 1982 Series III has a cracked cylinder head. I have been offered a later 2.5-litre head which looks identical. Can you confirm whether this will fit my engine block?

C McLeod, Farnham

A It will physically fit, but the 2.5-litre head has recessed areas between the valves to reduce the compression ratio, which compensates for the longer stroke of the 2.5-litre engine. Fitting a 2.5-litre head to a 2.25-litre bottom end will give you an engine that is smoky and well down on power – it's the sort of thing you might do in an emergency when stranded in a small town in Tunisia, but it is not really recommended otherwise unless you can help it.

You are much better off trying to find the correct 2.25-litre head. Make sure that you have the hotspots replaced if using a secondhand head. These hotspots (or pre-combustion chambers) tend to crack over time, and can break up entirely, which will wreck your engine.

Richard Hall

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Most old Range Rovers are cheap for a good reason. Trevor Cuthbert takes on £1500 worth of “going concern” – to build something quite special

{NEW PROJECT}

PART 1

RANGE ROVER CLASSIC

**TREVOR CUTHBERT**

■ Tools: Inspection lamp.

TIME**2 HOURS****COST****FROM £1800**

Costs include £300 shipping

DIFFICULTY RATING

It's a sad fact that many old Range Rovers are run on a shoestring until the V8, the auto gearbox or the air suspension gives up, or until the body crumbles below MoT spec. It's why some examples can be had for a song – for a little bit of cash, you get a heck of a lot of motor. The challenge is in holding it all together, but there's a far better option – a complete rebuild to produce a refurbished and improved luxury off-roader with truly classic status.

My friend, Andy Webb got bitten by the Land Rover bug a few years ago with a 2004 Defender 90 Td5 hard top, fully prepared for off-road use with the Northern Ireland Land Rover Club (NILRC) and major events such as the Mud Masters. He then had an early Ninety rebuilt and equipped for extreme off road competition – a project that took two years to complete. Along the way, he brought home a very early Discovery and a Series IIA that had been languishing forgotten on an estate in Scotland and was awaiting attention. But there was another vehicle from the Land Rover stable that

Andy really wanted to own.

Like many of us, he felt the original Range Rover was becoming increasingly difficult to find – examples in useable condition are becoming scarce and prices are easing upwards. One of the main reasons is that even the youngest examples are twenty years old, and corrosion is getting the better of them. Another factor was the trend for cannibalising Range Rovers for their engines – both the petrol V8 and the diesel Tdi – and for building hybrid Land Rovers from a Range Rover rolling chassis, and many Range Rovers were scrapped in the process. So Andy was keen to find a good one to add to his fleet.

Ongoing searches turned up plenty of basket cases needing extensive repair and restoration, as well as some beautifully restored and highly priced examples. Neither option was what we were looking for; Andy wanted a reasonably priced Range Rover that could be put to work, rather than a high-end showpiece or a major fabrication job. Spreading the net further afield, eventually Andy found a 1983 model for sale, in France.

The Range Rover was advertised as

completely rust-free at a price of 3,500 Euros. The seller provided extensive detail photographs showing the Range Rover to be in very good condition as far as corrosion was concerned.

During the negotiations it emerged that there was some rust present, so the seller ultimately agreed to sell it for 2,000 Euros and deliver it across on the ferry to the south of England, where Andy took possession before driving it up to Cairnryan in Scotland and across on the ferry to Belfast – a fair test for any 30-year-old vehicle.

It was at this point that Andy asked me for some help with a few modifications that he wanted. Firstly, the Range Rover is a left hand-drive model, so could I convert it to right hand drive for the UK roads? The other issue was the performance. Andy was disappointed with the power and torque available, so what could be done to improve it – could I install a later engine? Two simple questions when you say them quickly but they both add up to a major piece of work.

My initial assessment of the Range Rover told me that the body and chassis were very sound, even though the vehicle was tired and worn. Like many an old Range Rover, it was sitting down at the rear, indicating that perhaps the self levelling unit between the body and the rear axle was not working correctly. The bodywork is pretty straight with only one



1 An assessment of the cabin of the Range Rover concluded that a replacement dashboard would deal with most of the problems noted. Mileage seems genuine.



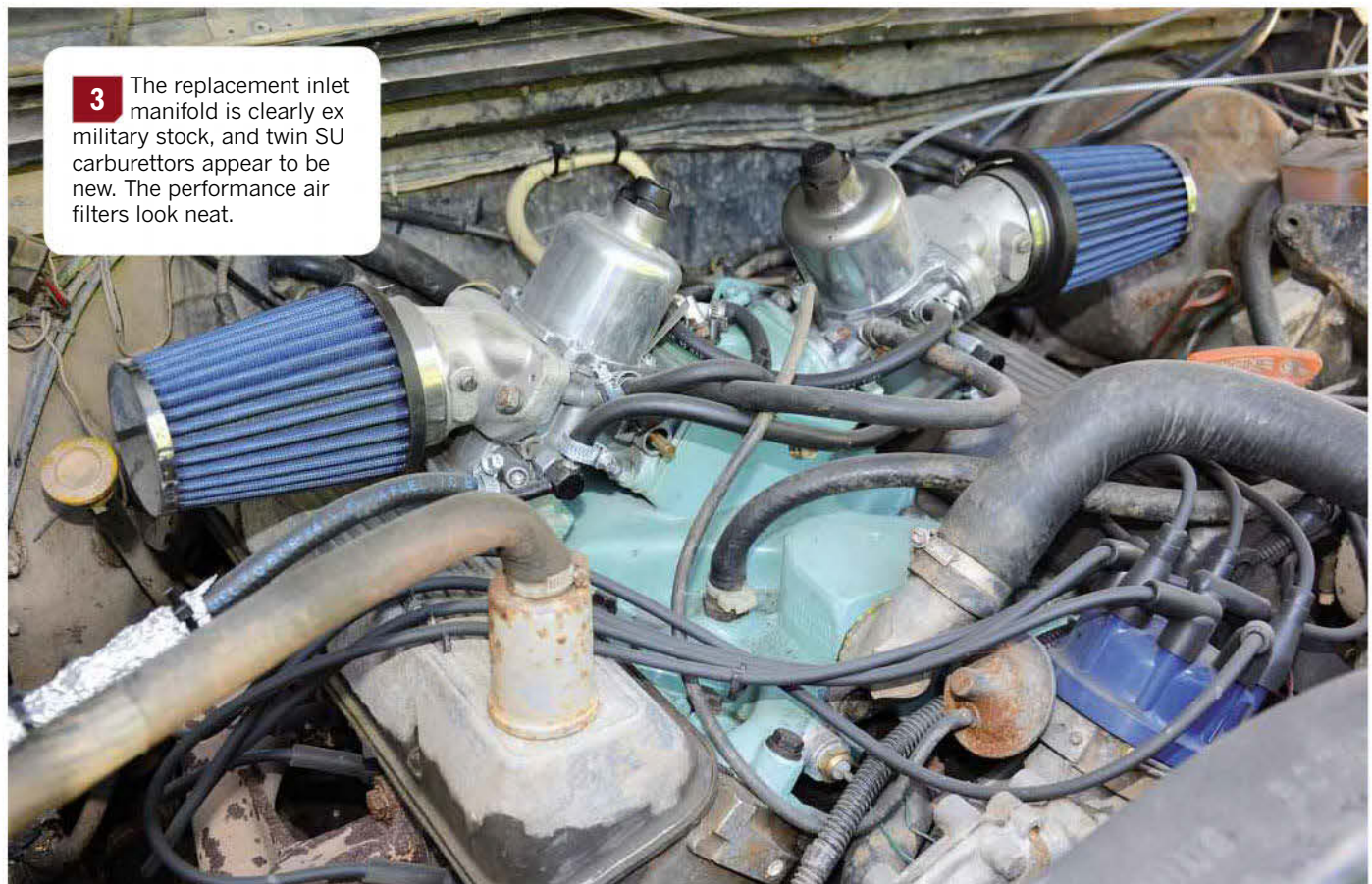
2 The engine bay is unmolested with the exception of the fuel inlet system. As a 1983 model, electronic fuel injection was expected, not twin carbs.

significant dent in the driver's door. The rear tailgate sections are in good condition, with none of the characteristic rusting evident on the lower one. The four main doors have no rot on the bottoms, and the door pillars are completely sound.

The recorded mileage of 254,730 km (158,000 miles) is not unduly high for the age. The seats are in good shape with no tears or holes in the fabric. The dashboard looks tired and has a few unsightly aftermarket modifications, but it will need to be changed for the right hand drive conversion. One striking feature of the interior is the headlining. These tend to sag badly with age, but this has new fabric neatly fitted. However, the fabric is electric blue crushed velvet, and I'm guessing Andy will want this changed. The steering wheel has been swapped for an aftermarket wooden rim item of decent quality, although it is a little smaller than the original.

Under the bonnet, the reason for the disappointing performance is clearly evident. The fuel injection system, factory fitted in 1983 has been replaced with twin SU carburettors on the appropriate inlet manifold.

This manifold is painted in the familiar fresh 'military refurbished' green paint, and it would not surprise me if the new-looking SU carburettors have restrictor plates fitted within. Either way, this arrangement would have lower



3 The replacement inlet manifold is clearly ex military stock, and twin SU carburettors appear to be new. The performance air filters look neat.



4 As our picture shows, the engine bay components are all present and correct, even if they are looking their age after 30 years.



5 The fuel lines have been wrapped in tin foil, as an attempt to shield them from the heat of the right hand side exhaust manifold.



6 The electric fuel pump is well located on the inner wing – away from heat and easy to check for fuel leaks or other issues.



7 In general, the body panels are in good condition, with only one bad dent and no signs of any corrosion. The paint finish is acceptable.



8 The lower tail gate has an unusual latching mechanism and handle. Note the exterior handle, just above the number plate. There is no rust evident.



9 There is bound to be a story behind these dents on what is currently the driver's door. Otherwise the body is remarkably dent free.



10 The wooden rimmed aftermarket steering wheel is one modification that may be retained, while the added wiring and lights will have to go.



11 The re-trim of the headlining has been very neatly effected, although the colour chosen is not in keeping with the Range Rover.



12 The seating fabrics are in good condition and a good clean and perhaps some re-stretching, here and there, is all that's needed.

“How hard would it be to take out the chassis?”

performance than the original EFi system.

The installation of the electric fuel pump is not the neatest job, and the tin foil acting as a heat shield on the fuel lines is certainly not fit for purpose. Repair work is needed to the inner wings, as is expected, but otherwise the engine bay and front valance area are both in good condition.

The initial brief from Andy is to convert the Range Rover to right hand drive and fit an exchange engine – either a 4.2L V8 EFi from an LSE Range Rover, or the 3.9L V8 EFi – and to underseal the vehicle.

But, knowing Andy, I suspect that there will be more work to be carried out during the course of the project. “How hard would it be to take out the chassis, Trev, and have it galvanised?” he asked.

This could get serious ...

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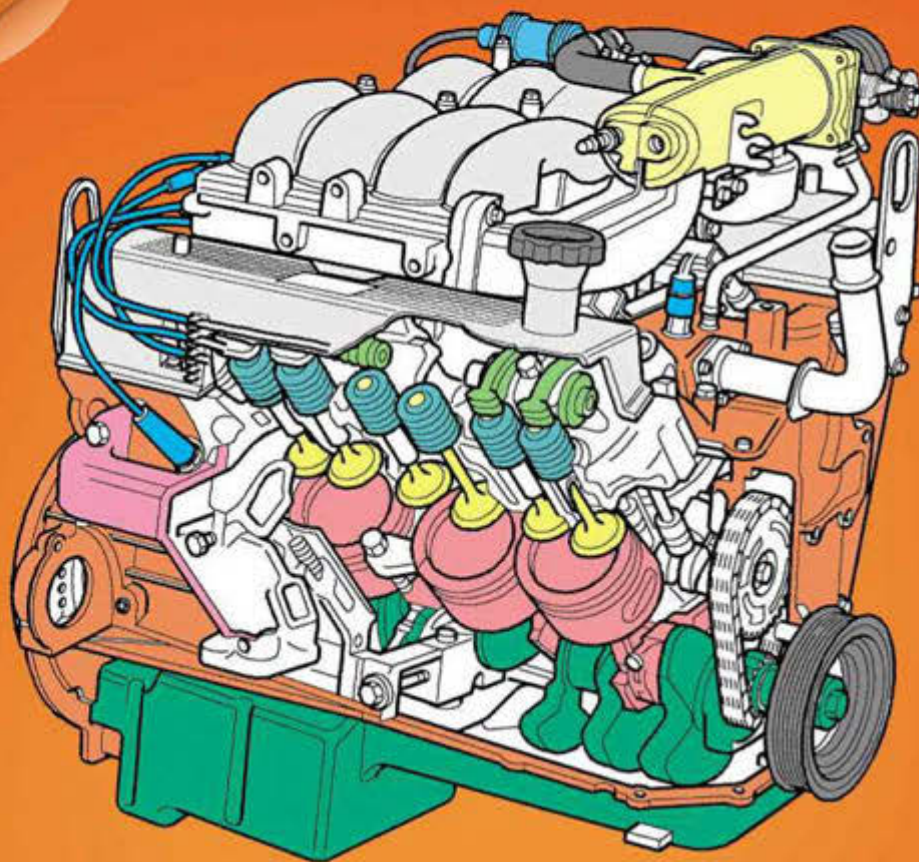


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{KNOW YOUR}

ROVER V8 ENGINE

Familiarity with your V8 engine, its peculiarities and its needs, all helps to maintain performance and longevity

Words & photos: Ralph Hosier

The Rover V8 is still one of my all-time favourite engines. It may not be the most powerful V8, but its simplicity and light weight have made it the star of a great many vehicles over the decades.

It started out as a Buick design launched in 1960. Back then it was a very contemporary design with aluminium block and heads for low weight. But it was a little ahead of its time and its small size and need for special coolant put US customers off. The design and tooling was subsequently bought by Rover in 1965 and significantly modified and fitted with twin SU carburetors to suit the Rover P5b saloon. Then, in 1970, the compression ratio was lowered for the first Range Rover. Shortly after that, it appeared in the 101 Forward Control

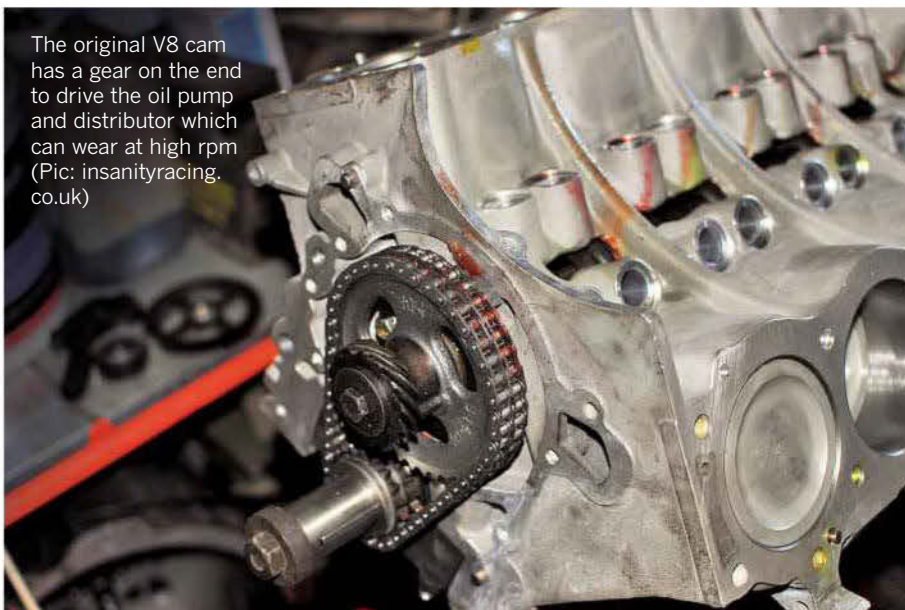
military Land Rover, and then in the Series 3 Stage One V8 as a precursor to the Defender V8. The launch of the Discovery in 1989 was the last new application for the twin carburettor 3.5-litre V8 engine. After that, fuel injection was required on any new type of vehicle.

The V8 was enlarged to 3.9-litres in 1994 and continued to be used in Range Rover and Discovery. It also briefly appeared in the Defender SV90. In 1992, a longer stroke 4.2-litre version was introduced in the Range Rover LSE.

When the bore was stretched for the 3.9-litre mill, the cylinder liners were not held quite so well as in the 3.5 engine, and they have a tendency to creep down which, in turn, compromises the cylinder head gasket clamping efficiency, and gasket leaks are then common. Engines with this

fault are expensive to fix properly, although it has to be said the fault can usually be 'lived with' if not too severe. The results of this problem are a tendency to blow coolant out, resulting in overheating, and in some cases a tendency to burn a bit more oil than usual but, if the coolant gets into the oil, then the engine will quickly destroy itself. If the liners have sunk and caused the head gasket to fail, then skimming the heads will not fix the problem. Either new liners have to be fitted or a replacement engine block found from somewhere.

For the Range Rover P38 and the Discovery 2, the V8 was considerably revised with larger bearings, stronger crank, stronger block with extra block ribbing, and larger cross-bolted main-bearings. The crankshaft nose is different where it drives a concentric oil pump which is no longer driven by



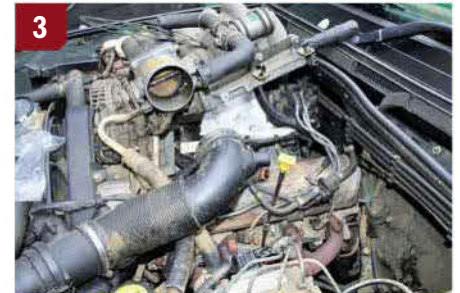
The original V8 cam has a gear on the end to drive the oil pump and distributor which can wear at high rpm (Pic: insanityracing.co.uk)



“It adds up to a very impressive life for an engine that was designed in the 1950s”

1. EFI's earth strap at rear of engine can corrode, leading to false readings in the system and possibly poor running, starting and idling.

2. Combustion chamber's squish effect shoots the mixture at the spark plug from the side. Multi-electrode plugs shroud the spark and don't work so well in this engine.



the camshaft, and most do not have a distributor. The V8 now came in two capacities designated 4.0 and 4.6, although the 4.0-litre was actually the same 3946cc capacity as the old 3.9-litre.

Production came to an end at Land Rover in 2005, the last application being the 4.6-litre Discovery for the North American market in 2003/4. Production for service replacement and specialist vehicle manufacturers continues to this day by MCT in Weston-Super-Mare. It all adds up to a very impressive life for an engine that was initially designed in the 1950s.

SO, WHAT COULD GO WRONG?

Land Rover engines are generally low-powered so they can cope with heavy use for extended periods and with poorer specification fuels found in far off lands. However, that robustness does depend heavily on good maintenance, something which is often neglected.

Spark plugs

The old V8 can be a bit hard on its spark plugs. If you do a lot of short journeys in cold weather, they will need changing a lot earlier than if the car does mainly long motorway

IGNITION

ON DISTRIBUTOR models, if the coil is not charging up fully after each spark, then it limits speed and power. This could be because the coil is damaged internally or the driver unit is malfunctioning. Check the earth wire from the driver unit on older models – it tends to corrode where it's attached to the inner wing.

The distributor cap tends to foul its terminals with a hard white deposit, and this can cause the engine to lose power and stall at idle speed. If this happens when out in the wilds, then simply scrape the deposits off with the edge of a coin. Dressing the terminals with a small grinding tool will restore them briefly but, as the corrosion eats into the terminals and widens the spark gap, the cap will eventually need to be replaced. It is the same with the rotor arm too, with hard black deposits forming on the trailing edge. Again, these can be scraped off as a temporary fix.

In distributor-less models the plug leads from the coil pack need replacing after about year ten. This task is often neglected because the plenum chamber has to be removed to gain access.

3. On late Thor V8, upper intake has to come off to change plug leads, hence they are often neglected. Coil pack is against the bulkhead.

journeys. As the cylinder head is made of aluminium alloy you must be careful not to cross-thread the plugs when fitting them, so always wind them in by hand and use a tool only for the final tightening. A very small amount of copper grease on the thread will make them easier to remove later. If a spark plug is proving difficult to get out, then soak it in penetrating oil for a day before extracting it. If necessary unscrew slightly, then turn it back in before unscrewing some more. Little by little, the tight ones should come out, but you should never need to apply a lot of force to extract them.

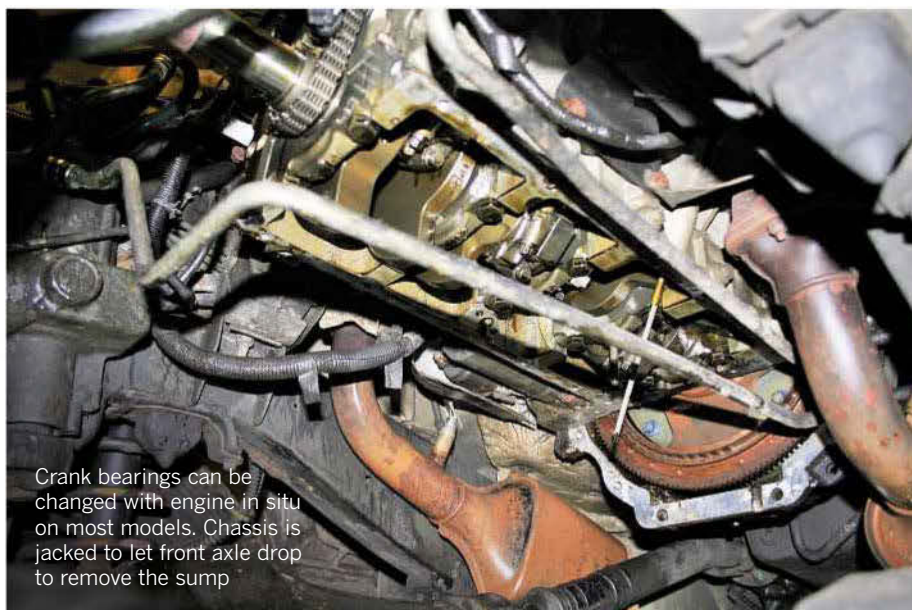
Today there is a very wide choice of spark plugs available, and I have found platinum single electrode plugs to give the longest and most reliable service. Avoid multi-electrode plugs as they don't work so well on this sort of combustion chamber, and can give cold start issues.

By the way, you don't need a 'special' plug for LPG; just a good quality one in good condition. The standard ignition system provides over ten times more spark energy than the

FUELLING

CARBURETTORS can suffer from old fuel clogging the small bores, and from leaking gaskets. If the engine runs rough it may be worth stripping the carbs down, cleaning them out and rebuilding them with new seals and gaskets; this can transform an old engine. All fuel injection systems used an air flow meter. Air leaks between the air meter

and engine will cause problems, so make sure all the hoses and small pipes are secure and not cracked. Also check the extra earth strap at the back of the engine which is essential for EFI systems to work properly. On later engines with oxygen sensors, any air leak in the exhaust manifold will cause false readings and make the engine run rich.



Crank bearings can be changed with engine in situ on most models. Chassis is jacked to let front axle drop to remove the sump

minimum required for petrol (to allow for petrol's relatively poor mixture formation). LPG mixes much better than petrol.

Engine Oil

Rover V8 engines need frequent oil changes, and this is the most important service item. Modern oils last longer than they did back in the 70s, but it's advisable to change it every 10,000 miles at least. If the vehicle is used on short journeys or is parked up for long periods, it's worth doing oil changes at 5000 miles intervals.

Sadly oil changes are often neglected, resulting in tar building up in the oil galleries, clogging the valve gear. That leads to rapid rocker shaft wear, and wear of the camshaft lobes which reduces power and makes a heavy tapping noise. There have been plenty of cases of cars being driven in this condition with the owners blissfully unaware of the damage. In more severe cases, the oil feed to the main bearings can be compromised, and failure becomes inevitable.

If you have just bought a car and the oil is in poor condition, change it

immediately, then drive the car normally for a few hundred miles so the detergents will remove the deposits. At that point, change the oil again, remembering to change the oil filter on both occasions too.

But a word of caution: if you empty the sump of oil and also remove the old oil filter, oil will drain out of the pump and out of the oil pick-up tube. If this happens, when you next start the engine after filling with new oil, you will get no oil pressure because the pump is sucking on air and won't prime properly.

To avoid this, drain the sump, fill it with new oil, and replace the oil filter. That way a slug of old oil stays in the pick up tube and the pump works immediately. I also fill the new oil filter with new oil before fitting, but patience is needed because it fills slowly, and fitting a full filter is a bit messy too, but it is worth it. If, after doing this, the engine oil pressure warning light stays on after an oil change, then bring the engine speed up to about 2000 rpm immediately to increase the pump suction. But, if the light stays on for more than a few seconds, turn the engine off



5. Filling the oil filter with oil before fitting takes time but reduces the risk of oil starvation when starting after an oil change. Oil changes are vital.

6. Cooling system is often neglected. Check for water pump leaks and coolant level changes. Never use a chisel to remove fan – the hammer impact damages the pump bearings.



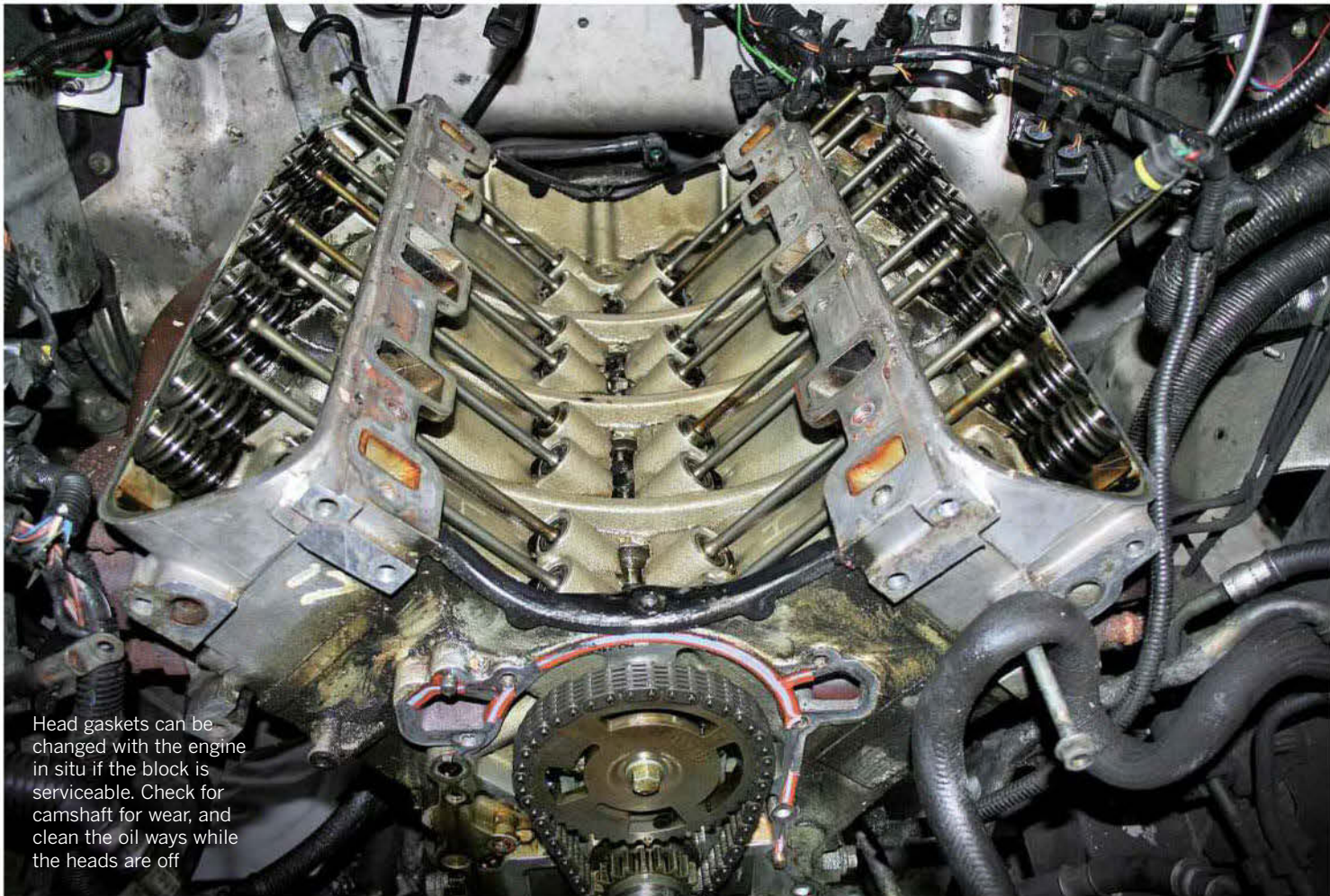
immediately and find out what's gone wrong with the oil circulation.

The basic engine design goes back to the 1950s and, as such, has fairly wide tolerances in the bearings and so it needs a reasonably thick oil. The original oil viscosity was specified as 20/50, but Land Rover gradually reduced the specified viscosity to 15/40 to reduce drag and improve fuel economy very slightly. I find that reverting to the thicker 20/50 on high mileage engines reduces rattle on start up and makes them run a bit smoother when warm.

If the oil pressure light stays on, there are two possible causes. A common fault is that the oil pressure switch has relaxed and comes on even at normal oil pressure. The fix is to fit a new switch, which is easy and cheap. If the oil pressure is genuinely slow to pick up, then the main and big end bearings may be worn. At this stage the bearings need to be changed before the engine starts rumbling and suffering real damage.

Cooling System

Most cooling problems are caused by blockages inside the radiator, or a



Head gaskets can be changed with the engine in situ if the block is serviceable. Check for camshaft for wear, and clean the oil ways while the heads are off

“Old coolant turns acidic and eats into the engine”

seized thermostat or low coolant level due to leaking hoses. Also, watch out for mud blocking the airflow through the radiator. Water pump bearings wear, particularly if the car has ever lost coolant in its life, so look for tell-tale coolant traces on the back of the pump pulley or a tendency to squeak from a cold start.

Coolant degrades over time, and traditional ethylene glycol-based coolants should be replaced every two years or so. Around year 2000 the Discovery 2 and Range Rover P38 switched over to using OAT (Organic Acid Technology) coolant which lasts a lot longer but still needs changing after about five years on average. Old coolant not only loses cooling performance, but also turns acidic and can eat into the engine and radiator.

The coolant needs to be mixed with water because water is the better heat carrier. If the concentration is too strong, under extreme circumstances it

7. Corrosion due to weak coolant results in white powdery deposits and leaks at hose joints. Older cars benefit from new hoses, and metal pipe ends cleaned up

may overheat. Conversely, if it is too weak then it may prematurely boil and allow cylinder head damage as well as accelerated corrosion. Generally a 50/50 mix is best, or a little stronger in extremely cold climates.

Head Gaskets

The original 3.5 V8 was very robust and is unlikely to need a head gasket change unless it has overheated. By contrast, the 3.9 and later engines seemed to have difficulty holding their cylinder liners up, when this happens the head gasket is no longer held securely and is gradually eaten away until it starts leaking.

If the leak is to the coolant gallery it will blow coolant out of the header tank; if it leaks to the oilway then oil will be burnt in the combustion chamber. So if the head gasket needs to be replaced, you must first cure the cause of the failure, otherwise it will simply fail again a few hundred miles



8. With heads off, clean the valves and check them for damage. Overheating may result in cracks around the valve seats. (Picture: insanityracing.co.uk)



9



AGEING

MANY PARTS age, even when not in use, especially rubber which reacts with oxygen in the air and becomes hard and brittle. Parts such as cooling hoses and fuel pipes made of rubber will perish, and ten years should be considered to be the maximum life of a rubber component. Fuel pipes should be replaced for safety well before they show clear signs of perishing.

9. Typical pitting and wear on cam lobe and follower. New cam and follower will wear and settle together – but mixing the followers will start the wear process again.

10. Belts and idler pulleys are service items. When belts are off for renewal, spin and check pulleys for roughness or play. Note the belt route before removal.

“35 years of Land Rover production is an impressive testament”

later. When re-assembling, use the later type of composite head gasket which offers much better reliability.

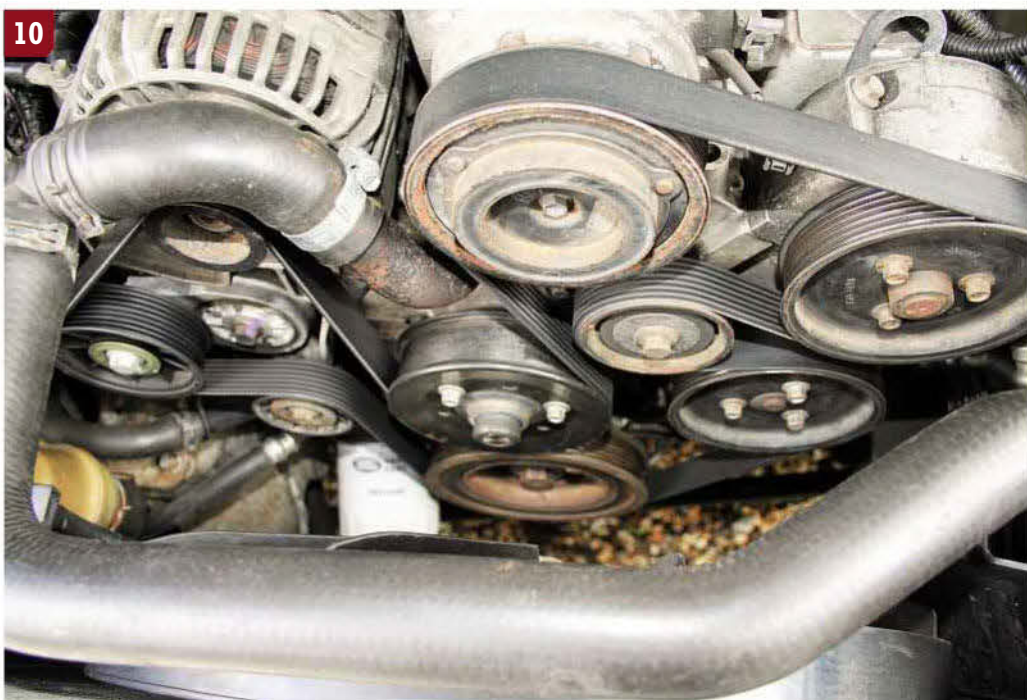
Cracks in the cylinder blocks of the larger capacity V8s can allow coolant to seep up between the cylinder liner and the block, to be vaporised in the combustion chamber. This can cause a drop in the coolant reservoir level with no visible cause. If the cylinder heads are removed, the effect may show up as ‘washing’ of the piston crown and/or valves.

Camshaft

This is one of the first components to wear down if the oil is neglected. A slightly worn cam will still allow the car to pull away okay, but it will run out of puff when you put your foot down. It won't start rattling until it is severely worn because the hydraulic cam followers will automatically adjust for the wear.

When changing the camshaft, always change the followers at the same time and check the push rods are all straight by rolling them on a very flat surface, such as a mirror. Also, check that the cam gear and chain are in good order – hold the chain sideways and if it droops down

10



then it needs replacing.

These engines can run with only half the cylinders working properly, so camshaft wear often goes unnoticed for years. When replacing the camshaft, it may be worth using an improved profile.

As fuel consumption becomes ever more important, using a milder cam to improve low-end torque and MPG at the expense of top end power, makes sense.

The camshaft can be changed with the engine in the car, but it requires the removal of the radiator,

sump, front end drive belts, intake manifold and the front engine cover, so it's not a small job.

In Conclusion

The Rover V8 is one of those engines that keeps on going even when it's in dire need of repair. It's often neglected, sometimes derided, but in general it is solidly reliable if maintained properly. Thirty five years of Land Rover production is an impressive testament for this great engine – the Rover V8 is a true legend among engines.



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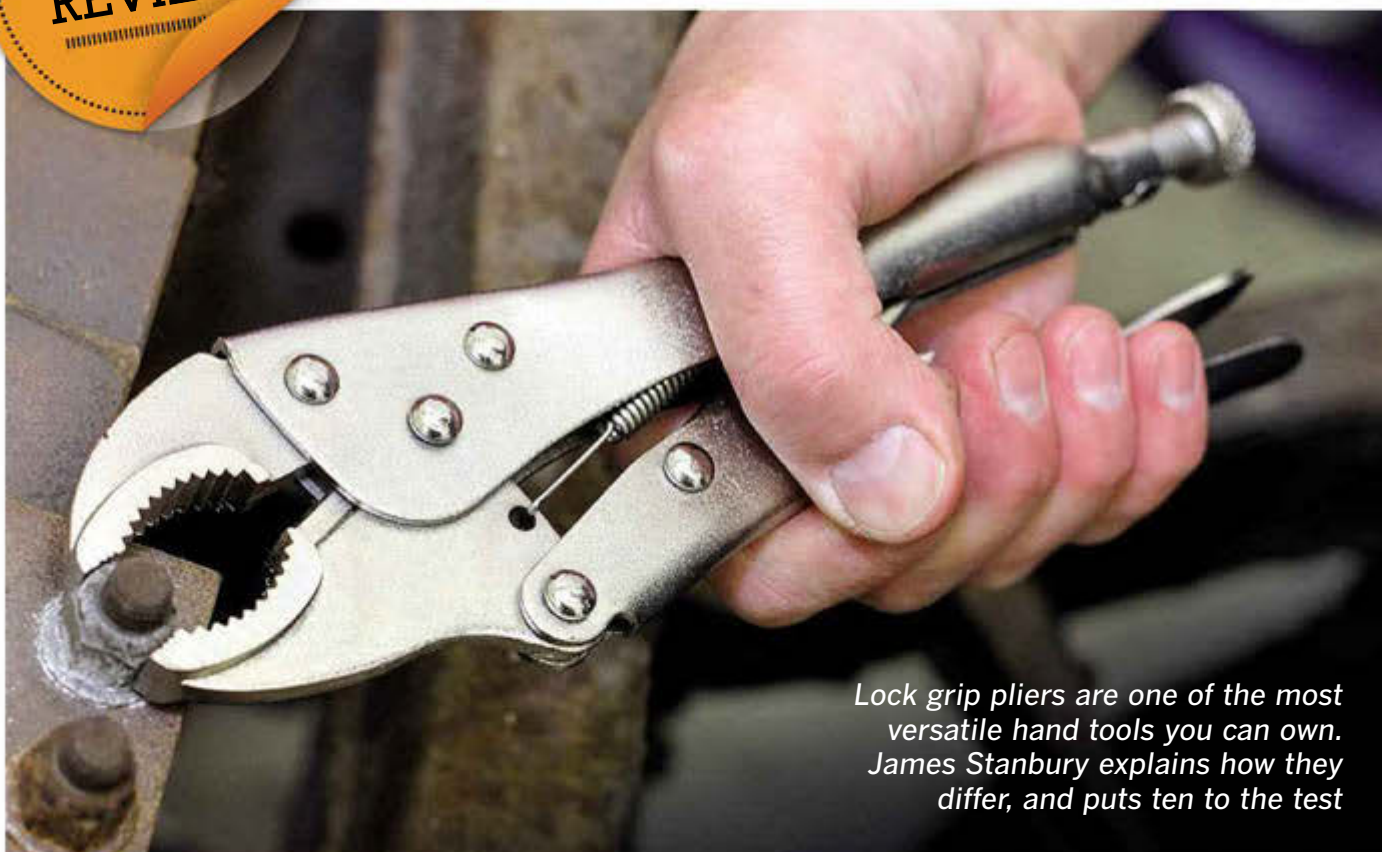
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Lock grip pliers are one of the most versatile hand tools you can own. James Stanbury explains how they differ, and puts ten to the test

LOCK GRIP PLIERS



**JAMES
STANBURY**

Traditional mechanics tended to have a dim opinion of Molegrips and other brands of lock-grip pliers. And this derision was not usually anything to do with the tools themselves, but more aimed at trainee mechanics butchering tight nuts and bolts with them rather than fetching the correct sized spanner.

There was an old saying that if a proper sized tool wasn't available, then an adjustable spanner should be the next option on the list. And if that didn't work, Stillson style tools were the last resort – and they should always be used instead of lock grip wrenches.

In a way, this traditional wisdom is right. The design of Stillsons, and similar tools from other manufacturers, means that gripping force increases proportionally with the leverage on the tool. In contrast, the clamping force in lock grip pliers' jaws is set when the tool is deployed, and trying to turn a nut or bolt with the tool actually pits all

that leverage against the gripping forces locked inside it.

Despite this, plenty of lock-grip pliers lock on so forcefully that, in almost all circumstances, they work effectively. Equally true is that Stillsons, et al, just aren't the nicest tools to use.

They're often too bulky for the tight confines of modern Land Rovers, exacerbated by having to be turned a fair few degrees before they even start gripping. Clearly this rules out their use in many situations.

So, whilst lock grip pliers might not be the best tools to budge tight nuts and bolts with, they are often the only realistic option – particularly if the fasteners are already butchered from someone else's previous attempts.

Of course, lock grip pliers have other uses as well as acting as heavy duty adjustable spanners. During welding and metalwork, these tools make brilliant clamps for holding panels in place.

And they're also excellent for simply holding items tightly, whether that's whilst they're being cleaned, sanded, soldered, or even just being hit with a hammer.

Given the versatile applications of these products, we feel you can never really have enough of them. This is precisely why we've decided to put sets under the microscope, rather than individual tools.

WHATEVER HAPPENED TO MOLEGRIPS?

IF THERE'S one brand conspicuous by its absence in this group, it's Mole. In fact, over the years, the title Molegrips has practically become a generic name for all lock grip pliers. At least over here in the UK. Well the good news is that Molegrips are still available, as the Newport based company was absorbed into the giant Stanley Tools combine some years ago. Today they are sold as Stanley Moles, although they are somewhat different looking to traditional Molegrips. They are also only sold as single tools, which is why they couldn't be included in this test – which concentrates on sets. One myth we can explode is that Molegrips invented lock grip pliers. In the UK, they were certainly the first company to bring the concept to the market in the mid 'fifties. But the American firm behind Vise-Grips, actually invented the tools in Nebraska back in 1924. So there.

KENNEDY KEN-558-7290K

COMMENTS: Whilst these two tools don't have quite the beautifully finished appearance of the all-conquering Vise-Grips, they soon prove themselves to be extremely competent budget alternatives. They fit in the hand just as well, and - more importantly - they are similarly slim in the centre, which is essential to maximise your hand's clamping force. At 53mm wide, the largest tool actually opens slightly wider than anything in the Best Buy set. And the smaller model feels a little less cumbersome thanks to its jaws being a couple of millimetres slimmer. Under intense strain and twisting, these weren't quite as bombproof as the overall winners, but they were incredibly close behind them.

PRICE: £17.63

PRICE FROM: www.cromwell.co.uk

CONTACT: 0116 288 8000

WEB: www.cromwell.co.uk

PERFORMANCE: 9/14

IS IT WORTH THE MONEY? 5/6

OVERALL SCORE: 14/20



DRAPER 14040

COMMENTS: We double checked our prices after testing this set because they feel like the budget entry - despite their 09217 siblings being significantly cheaper. In use, the tools just seem to be unnecessarily cumbersome. They aren't as slim as the 09217's pliers, in the critical area where you want to maximise hand clamping force. And even the heads of the tools feel needlessly bulky around the jaws. Gritty adjusters, which became noticeably notchier after the loading tests, are another drawback. But it's not all bad news. We like the combination curve/straight jaw pattern, and max jaw opening of 50mm is impressive.

PRICE: £17.95

PRICE FROM: www.tooled-up.com

CONTACT: 0238 0494333

WEB: www.drapertools.com

PERFORMANCE: 5/14

IS IT WORTH THE MONEY? 5/6

OVERALL SCORE: 10/20



SCREWFIX 17518

COMMENTS: These are the cheapest tools in the group, and it shows. But perhaps not for the most obvious reasons. Shape-wise, these fit in the hand perfectly - much like the Best Buy and Recommended Kennedys. Their slim waists make it relatively easy to force the tool fully closed even when considerable clamping power is required. And, under load, these are no weaklings either. So why the low score? The biggest tool's max jaw opening of just 40mm is at the low end of acceptable, but the real problem is the odd jaw shape. The curve is much too wide and doesn't close up as it reaches the pivot end of the jaws.

PRICE: £7.99

PRICE FROM: www.screwfix.com

CONTACT: 0500 414141

WEB: www.screwfix.com

PERFORMANCE: 4/14

IS IT WORTH THE MONEY? 6/6

OVERALL SCORE: 10/20

WHAT'S IMPORTANT?

VERSATILITY: Tools with jaws that open very widely are obviously usable in more applications than products with a less impressive range. However, in some applications, the jaws' actual width is a factor too. If it's excessive, it may not be possible to reach into a gap to grab whatever needs retrieving or pulling.

Similarly, jaw length plays a part as well when tackling deeply recessed components. Ideally a set will contain tools that feature wide opening jaws, long jaws, and narrow jaws.

Jaw shape is another issue worth considering. Straight jaws tend to be beneficial when holding round objects because they maximise grip on the two areas where the tool and object meet.

Curved jaws are thought to be better for nuts and bolts because they spread the load across at least four corners. However, very deep curves often inhibit performance on small fasteners, and mean opening the tool excessively widely to cope with larger fasteners.

EASE OF USE: On practically all lock grip pliers, the adjuster sits in a thread cut through a welded section of the body, which can make the adjuster difficult, or notchy to rotate. And the problem is exacerbated when your hands are oily too.

Better quality tools tend to be machined more finely, and avoid this irritating issue. Once the tool is adjusted up, forcing its two halves together often requires considerable clamping power from your hand. This is made much easier if the tool itself is narrow rather than excessively wide. After all, it's far easier to grip something medium sized rather than large in operation.

Some tools have rubber, or plastic, covers on their handles to improve comfort. Often, though, they bulk up the product unnecessarily, and prevent it being used in hot applications - such as during welding.

STRENGTH: Lock grip pliers can normally be clamped around items fearsomely tightly without harming the tool. But twisting is another matter - such as if the tool can only be mounted on a nut/bolt end on, and then it's subject to high levels of torque.

STORAGE: Even the best adjuster threads will become difficult to use if they rust or become full of grit or other debris. Consequently, it's always an advantage if a set comes with a decent storage roll or case.

THE TESTS

VERSATILITY: The first two points are awarded to the widest opening tool in each set. To get both, jaw opening width must be at least 50mm. A further two points are awarded for slenderness, with only tools sporting jaws less than 5mm wide earning their sets both points available. A further point goes to all sets with at least one set of long-jaw pliers included. The final two points in this section are awarded for jaw profiles. Odd shapes that prevent decent grip get nothing.

EASE OF USE: Each tool's adjuster was tested prior to being loaded, and afterwards. Only adjusters that remained free moving throughout got the next two points. A further point goes to all tools that are comfortable to use, and allow decent levels of hand clamping force to be exerted. If plastic cushioning has been added to the tools, the set will miss out on this next point unless the plastic can be removed easily – which is essential to prevent it melting in high heat applications such as welding.

STRENGTH: We clamped each tool tightly on to a large nut – end on – to the best of our ability, and then tried to rotate it with a lever. This showed if there was any inherent play in the mechanism, and we also checked that the tool returned to its original shape – and that the jaws were still properly aligned – when it was released. Only tools completely unscathed by the experience got these next two points.

STORAGE: Only sets supplied with a decent pouch, tool roll, or storage case, get this final point.



DRAPER 88293

COMMENTS: Let's kick off with the good news. Under high loading, we couldn't call whether these or the Vise-Grips were best – these are seriously tough pieces of kit for the money. The choice of pliers supplied is well thought out too. Long-jaw tools are best suited to low load applications, so it makes sense for them to be the smallest pliers of the three. But, in all other ways, we feel this set needs a rethink. The padded handles do nothing to improve comfort, but make them harder to clamp down fully. They aren't removable either, again ruling out applications with heat. Our final niggle is that the biggest tool's jaws only open a max of 38mm – the least in the group.

PRICE: £25.55

PRICE FROM: www.toolstoday.co.uk

CONTACT: 0238 0494333

WEB: www.drapertools.com

PERFORMANCE: 6/14

IS IT WORTH THE MONEY? 4/6

OVERALL SCORE: 10/20



SEALEY AK6863

COMMENTS: Priced perilously closely to the all conquering Vise-Grips, these had to be good to be considered as a realistic alternative. While these are a league above most here, in terms of finish and quality, they still lag behind the Best Buy. But only slightly. The same is true of overall robustness. These are tough tools that aren't going to break easily, but they didn't feel quite as indestructible as the Vise-Grips. The largest tool here opens slightly wider, and the storage roll is a nice touch. The plastic padded handles rule out use when welding.

PRICE: £40.79

PRICE FROM: www.autosessive.com

CONTACT: 01284 757500

WEB: www.sealey.co.uk

PERFORMANCE: 8/14

IS IT WORTH THE MONEY? 3/6

OVERALL SCORE: 11/20



KENNEDY KEN-558-7280K

COMMENTS: The second set of Kennedys is much like the first, with the most obvious difference being the completely straight jaws. As well as making the tools better suited to clamping completely round objects, the different jaws also change overall performance. For instance, max opening of the bigger tool drops down to 45mm maximum. More of an issue is the chunky 10mm width of the smaller pliers' jaws. In use, though, the two sets are hard to tell apart. Under maximum strain, this pair of tools also held up well.

PRICE: £16.07

PRICE FROM: www.cromwell.co.uk

CONTACT: 0116 288 8000

WEB: www.cromwell.co.uk

PERFORMANCE: 7/14

IS IT WORTH THE MONEY? 5/6

OVERALL SCORE: 12/20



DRAPER 09217

COMMENTS: At just over four quid per tool, this set is obviously from Draper's budget DIY range. So forget any kind of box or storage roll. Once you've cut the tools out of the sealed blister pack, it's good for the bin only. The tools themselves, though, don't feel bad in use. Okay, they aren't as beautifully slim, mid length, as the Vise-Grips and Kennedys. But neither are they as awkwardly bulky as plenty of more expensive models. It's much the same story with the adjusters: they're not as free moving as those on the premium models, but they're far from gritty and difficult to turn. Even robustness under strain was surprisingly good, leaving the overly curved jaw profile as the only serious drawback.



PRICE: £12.95
PRICE FROM: www.tooled-up.com
CONTACT: 0238 0494333
WEB: www.drapertools.com
PERFORMANCE: 5/14
IS IT WORTH THE MONEY? 6/6
OVERALL SCORE: 11/20



SIEGEN TOOLS S0463

COMMENTS: For a sub fifteen quid set, these tools really aren't that bad. The problem they face is that Screwfix's 17518 is a hell of a lot cheaper and, on average, the two sets are on a par performance-wise. Take ease of use as an example. These Siegen pliers simply don't fit in the hand as nicely. They're reasonably compact mid length, but not to the same extent as the 17518 pliers and premium models. However, the adjuster is much freer moving, and the max jaw opening of the biggest tool is pretty good at 45mm. We like the compact 7mm wide jaws on the smallest tool too.

PRICE: £14.39
PRICE FROM: www.autosessive.com
CONTACT: 01284 757500
WEB: www.sealey.co.uk
PERFORMANCE: 4/14
IS IT WORTH THE MONEY? 5/6
OVERALL SCORE: 9/20



SEALEY AK668

COMMENTS: Just as we wondered whether Draper had mixed up the prices of their two cheapest sets, the same is true of this Sealey set and its Siegen sibling. Once again, a really robust set of tools is let down by poorly shaped jaws. The curve is simply too deep. Given that these are almost seven quid dearer than the Siegens, the cost would be an issue if the rest of the tools were roughly equal. But, in all areas, the Siegens are the marginally better pliers. The biggest tool in this set opens 40mm wide, rather than the Siegen's more impressive 45mm. And twisting the adjuster to open the jaws reveals another issue: the thread is much grittier on these three models.

PRICE: £21.00
PRICE FROM: www.eurocarparts.com
CONTACT: 01284 757500
WEB: www.sealey.co.uk
PERFORMANCE: 3/14
IS IT WORTH THE MONEY? 1/6
OVERALL SCORE: 4/20



WISE-GRIP 10508020

COMMENTS: Vise-Grips invented these tools decades ago, so it's no surprise they've fully mastered them now. All three pliers in this set grip ferociously, yet exude quality and robustness. Even under heavy loading, no play could be felt. But don't assume the products are completely traditional as they sport two, currently unique, innovations. The jaws are shaped to optimise grip on nut and bolt heads – even to the extent that two cut-outs (which grip nut/bolt corners) move further apart as the jaws are adjusted wider. An Allen socket allows jaw pressure to be increased above what hand clamping alone can achieve.

PRICE: £44.42
PRICE FROM: www.cromwell.co.uk (ref VIS-5580-053D)
CONTACT: 0116 288 8000
WEB: www.cromwell.co.uk
PERFORMANCE: 11/14
IS IT WORTH THE MONEY? 4/6
OVERALL SCORE: 15/20

VERDICT

Vise-Grips have a formidable reputation for being tough gripping and practically unbreakable, so we expected them to be good. But two other factors took us a little by surprise.

First, as well as being the best finished and best performing pliers here, the Best Buy Vise-Grips were also the most innovative – thanks to the clever nut/bolt head grabbing jaws, and an Allen socket in the end of the adjuster allowing you to really crank up the clamping force.

Price was the other factor we weren't expecting. Given their best in the market performance, these products are pleasingly affordable.

Both Kennedy sets come highly Recommended too. At £16-17 each, they might seem almost budget priced. But bear in mind both are sets of two tools rather than three.

They don't have any clever features, and overall finish is good rather than impressive.

But they're second only to the Vise-Grips in terms of comfort, usability, and outright performance.

Draper's 09217 is our Best Budget Buy. They aren't the cheapest here, but easily the best performing of the lower priced entries.

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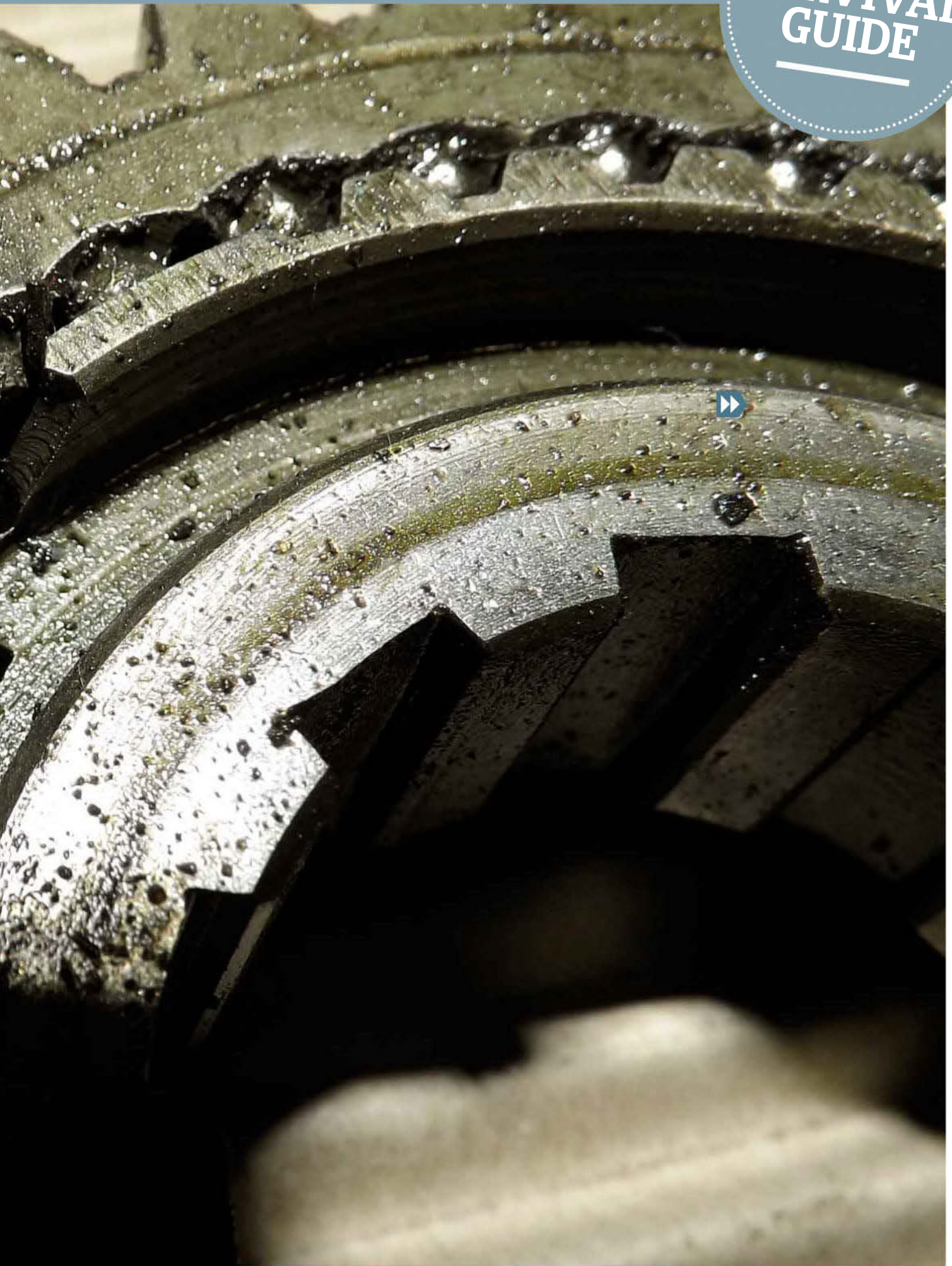
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TOP GEAR

Everything you need
to know about Series I,
II, IIA and III
transmissions 1948-85,
by Richard Hall

SURVIVAL GUIDE



MAINTENANCE

THE TRANSFER box has a fairly generous oil capacity for its size (2.5 litres) but the gearbox only takes 1.5 litres, so it is important that the oil level is checked regularly and topped up as required. There is an oil seal on the back of the gearbox mainshaft which quite often fails, allowing oil to migrate from the gearbox to the transfer box. This can also happen if (as is quite common) the mainshaft bearing housing is a slightly loose fit in the casing.

So the procedure is to place a drain can under the fill/level plug on the back of the transfer box, undo the plug and drain off any excess oil. If no oil comes out, top up until it just starts to trickle out of the hole. Earlier transfer boxes have a small level plug (too small to insert an oil filler tube) and should be filled via the removable plug on the top. Refit the transfer box fill/level plug, unscrew the plug on the side of the main gearbox and top up until oil starts to emerge, then refit the plug. Again, early gearboxes have a small level plug and a top filler: some also have a dipstick.

Oil levels should be checked every three months or 3000 miles, or more frequently if the transmission is leaking oil in significant quantities. The oil should also be checked after deep wading for signs of water contamination: oil the colour of milky coffee has water in it.

Gearbox and transfer box oils should be changed every 24,000 miles. There are drain plugs on the bottom of the gearbox and transfer box: new copper sealing washers should always be fitted.

The drain plug for the main gearbox is hollow: you may find bits of metal inside it. Mangled flat strips are 3rd/4th synchromesh springs (very common): triangular chunks (on Series III boxes) have probably broken off the 1st/2nd synchromesh hub – if you're wanting to analyse it all minutely.

Synchromesh faults are described in more detail on these pages.

Both gearbox and transfer box use straight EP90 gear oil, grade GL4. These days GL5 tends to be easier to obtain: there were some major issues a while ago with the additives in GL5 oils attacking brass and bronze components, and although these problems have supposedly been resolved, I recommend sticking to GL4 specification just to be safe.

Apart from periodic adjustment of the transmission brake there are no other parts of the transmission which require regular routine maintenance or adjustment.



The later system for controlling which wheels were driven – using yellow and red knobs – was easier to operate

Our story begins not in 1948, but 11 years earlier with the launch of the Rover 16, a solid and handsome saloon car built very much in the Rover tradition. The new car needed a new gearbox, and Solihull's engineers came up with a strong, compact four-speed unit with synchromesh on third and fourth gears (as was normal at the time). The gearbox was carried over unchanged into the early post-war Rover P3 saloon, now coupled to a new four-cylinder 1.6-litre engine which had been designed before the Second World War brought Rover's car manufacturing plans to a temporary halt.

So when the Rover designers were casting around for a suitable engine and gearbox for their stopgap utility vehicle (to be called the Land-Rover, and intended to keep the factory busy for a couple of years until demand for Rover's luxurious saloon cars returned) the P3 engine and gearbox were a natural choice. All that was needed was a two-speed transfer box to bolt to the back of the main gearbox, and a means of transmitting the drive to both front and rear axles. The Rover transmission designers would have been astonished if they knew that their little four-wheel drive transmission unit would still be in production, with only minor changes, nearly 40 years later.

But so it was to be. Very early Series I transmissions featured semi-permanent four-wheel drive with a lockable freewheel device on the drive to the front axle: this proved complex and troublesome, and was soon replaced by a simple dog clutch operated by a cunning system of rods, springs and pivoting forks. Red knob, yellow knob – simple to operate, robust and highly effective. The transmission was progressively refined over the years with larger bearings and stronger shafts. In 1971 it gained synchromesh on all forward gears for the launch of the Series III, and continued in production with a few further changes until Series III production

finally ended in 1985. Even then, production continued in Spain for a while longer, with the Santana company designing a stronger ribbed casing and supplying Land Rover with new gearboxes for as long as people were prepared to pay main dealer prices for them.

The Series four-speed gearbox has acquired rather a mixed reputation over the years. It was never intended for off-road use or heavy towing, but was a product of the leisurely world of pre-war motoring, designed for asthmatic long-stroke engines that might put out 50 bhp on a good day. Arguably it was never quite strong enough for the job: Land Rover kept changing and strengthening components throughout its long life, but always seemed to be one step behind as power outputs, vehicle weights and loads increased. But one of these gearboxes in good order will happily cope with the power of a 200Tdi (111 bhp) or even a Rover V8 (160 bhp) if treated with some sympathy and respect. Simple and massively over-engineered in the best Rover tradition, the Series gearbox is a big part of Land Rover's legendary reputation.

Troubleshooting

The Series transmission is a simple old beast designed for field maintenance, and a full stripdown and rebuild is easier than you might think. However it's held together by old-fashioned British Standard (BSF/BSW) fasteners, apart from the Series III layshaft bolt which is 5/8" UNF. So you will need a full set of BS sockets and spanners. A hydraulic press is pretty much essential for replacing bearings. Your biggest problem will be the poor quality of some of the replacement parts now available: Series III reverse idlers and layshafts, and the bronze bush which supports 2nd and 3rd gear, are especially problematic and it is well worth seeking out old-stock genuine Land Rover replacements – if you can find them.

Oil leaks: endemic to Series transmissions.

Starting from the top, oil seeps from the seals on the selector shafts and detent springs and runs down the sides of the casing. This is normal. The gasket between the bellhousing and main gearbox casing can fail with age, as can the one at the join between the gearbox and transfer box. The bottom cover plate on the transfer box is weak and tends to distort when the nuts are tightened, so leaks here are common. A cast aluminium replacement plate is available from Rocky Mountain. Transfer boxes usually weep some oil from the join between the casing and the rear output housing as there is no gasket, just a stack of steel shims. Finally the seals on the front and rear output flanges harden with age. Failure of the rear seal will contaminate the transmission brake with oil.

Reverse gear selection: the reverse gear detent consists of a hinged flap and two springs attached to the reverse selector fork: when a spring breaks the flap sticks up, allowing reverse to be engaged as easily as first. The springs can be replaced without too much trouble, but the floors and transmission tunnel have to come out.

Sticking transfer lever: on vehicles where four wheel drive and low ratio are infrequently used, the shafts inside the transfer box can stick. The usual symptom is that it becomes impossible to engage high ratio without also pushing down the yellow knob for four wheel drive. The front ends of the shafts are concealed under a pressed steel cover on the front extension housing: if this is removed, lubricating the shafts and giving them a tap with a hammer, then working them back and forth, will usually restore normal operation.

Jammed gear lever: the ball at the bottom end has a groove in it for an 'O' ring to stop it rattling. Sometimes a combination of missing 'O' ring, worn ball and worn forks allow the ball to slip between two of the forks, jamming the mechanism entirely. The floors and transmission tunnel will need to come out so the gear lever can be removed for attention. Gear levers can also break off at the bottom due to metal fatigue: it is not uncommon to find they have been welded back on.

IDENTIFICATION

ALL THESE gearboxes left the factory with a serial number stamped on them.

Up to around 1974 it was on the right hand side of the top cover: later gearboxes usually had the number stamped on the top forward edge of the transfer box instead.

This is unfortunate as the main gearbox had many design changes over its life while the transfer box had very few.

So if a late gearbox has been fitted to a different transfer box, it can be very difficult to identify the exact specification.

From the start of Series IIA production, Land Rover used suffix letters to denote changes in specification. So for example 27124356D would be referred to as a "suffix D" gearbox. When the Series III was introduced the suffix letters started again at "A".

If the serial number starts with a "1" it is a Series I or II box. Series IIA 4-cylinder boxes start "2", 6-cylinder (different bellhousing) "3" and Series III start "9".

Series IIA/III One Ton, and Series IIA/IIB Forward Control models had a very low ratio transfer box with strengthened internals: these are very rare.

There may be a few exceptions to the above: gearbox numbers broadly followed the same pattern as the chassis numbers of the vehicles they were fitted to.

For that reason it is possible that, for example, Series III One Ton 'box numbers start with a "2".



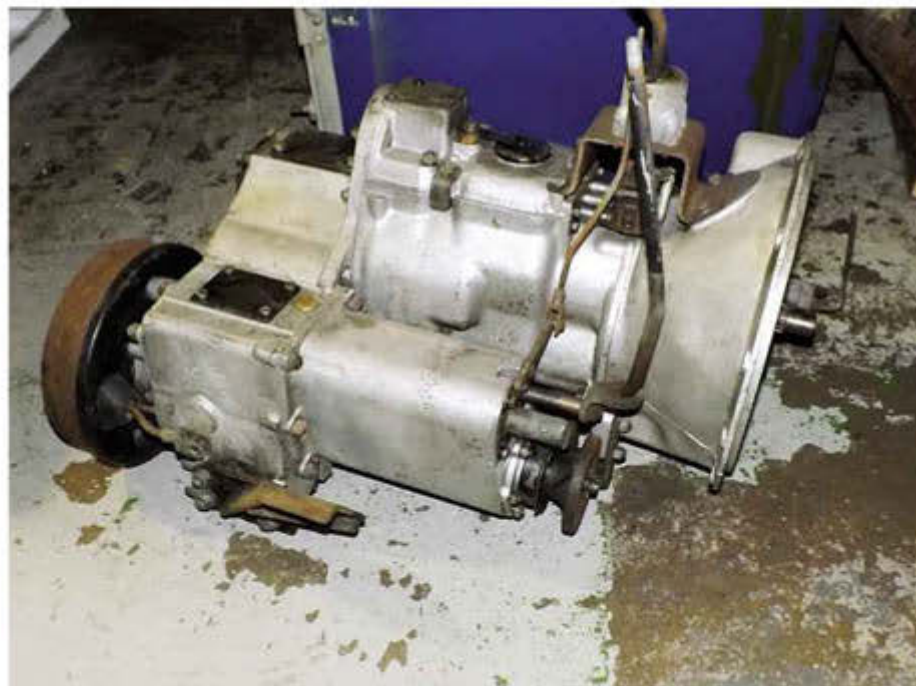
Above:
The two areas where transmission serial numbers are to be found

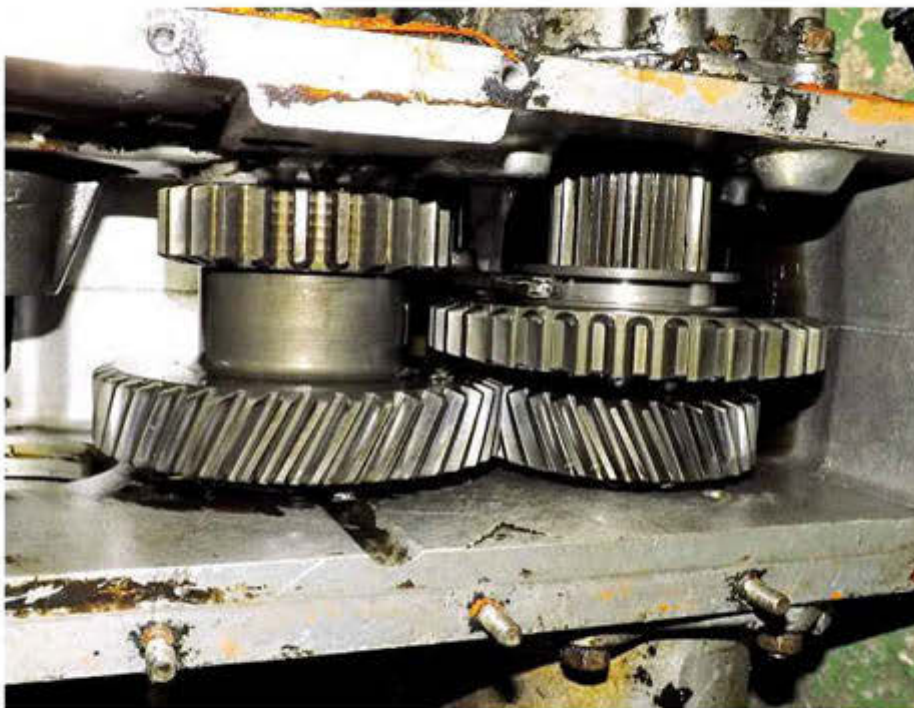
"Crunching" between gears: Series I, II and IIA gearboxes have no synchromesh on first or second gear and you will need to master the double-declutching technique for crunch free changes. Crunching on 3rd and 4th gear is usually caused by failure of the flat metal springs in the 3rd/4th synchromesh hub: these are almost impossible to replace without stripping the gearbox, but it will happily plod on like this for quite a while provided you double-declutch and change gear slowly. 1st/2nd synchromesh hubs on Series III 'boxes have a weak spot where the synchromesh rings locate: the corners of the hub break off, eventually leading to a very notchy and obstructive selection of 1st and/or 2nd gear. The synchromesh rings also wear with age and can be "beaten" if changing gear too quickly.

Reverse gear idler: reverse is a straight-cut gear with no synchromesh. Repeated abuse (slamming the gear lever into reverse while still rolling forwards) will eventually break the teeth on the reverse idler. Gearboxes up to Series III Suffix A have a plain bushed idler which gets very noisy with age: Suffix B and later have a roller bearing idler which should in theory be quieter. Many aftermarket roller-bearing idlers are incorrectly machined and will cause the gearbox to jump out of reverse; a modified idler is available from R Whitehouse and Sons.

Layshaft failures: Series I, II and IIA layshafts are attached to the front bearing with a nut and split pin, with the gears splined on to the shaft and sandwiched by a steel tube. This is a known weak point and despite several re-designs during its life, the layshaft can break without warning, resulting in total gearbox failure. On the Series III the layshaft is machined in one piece and seldom fails, but is retained in place with a Loctited bolt: this has a habit of coming loose, allowing the layshaft to move backwards and destroy the rear bearing and gearbox case. If the engine and gearbox are split for any reason it is worth removing the gearbox front cover (three bolts, four nuts) to check the layshaft bolt. If a gearbox is noisy in every gear except 4th, that points to a layshaft bearing problem.

Jumping out of forward gears: quite common on old, worn gearboxes. If you are very lucky a new set of detent springs might cure the problem, but more usually it is down to wear on the dog teeth between the mainshaft gears and synchromesh hubs – caused by "crunching" into gear on 'boxes with synchromesh problems. The teeth should be sharply pointed but on many older gearboxes they are worn down to round blobs.





A full rebuild is the only way to rectify this fault. A badly-worn spigot bush in the back of the flywheel can also cause gearboxes to jump out of 4th gear.

Gearbox noise: most Series gearboxes, even freshly rebuilt ones, whine to some extent. It is a 78-year-old design after all. Excessive noise in every gear except top will be layshaft-related as mentioned above. Noise in all gears is more likely to be mainshaft bearings. A regular rattle or clicking noise may be due to a broken gear tooth: the gears are strong, but not indestructible. Noisy reverse gear is normally caused by wear in the idler bush / bearing and shaft: some replacement layshafts on later Series III 'boxes have the wrong tooth pitch on the reverse cog, and these will whine in reverse even when all components are brand-new.

Upgrades & Enhancements

The Series transmission as supplied is fairly low-geared, and there are two ways in which you can gear it up for a more relaxed cruise: replace the transfer box with an Ashcroft high ratio unit, or fit an overdrive. Either will give you around a 30% reduction in engine speed for a given road speed. The Ashcroft

conversion consists of a replacement transfer casing with the layshaft position moved slightly and a new set of high ratio gears. The old transfer box has to be removed, stripped down to the last stud and dowel, and the internals rebuilt into the new casing with the new gears supplied. This is time consuming but well within the capabilities of a competent DIY mechanic.

An overdrive is essentially a two-speed gearbox which bolts on to the back of the transfer box, operated by a lever in the cab. It is much easier to fit than the Ashcroft conversion, but more complex and expensive, and less robust. Overdrives can easily be wrecked by misuse: they should only ever be engaged with the main gearbox in 3rd or 4th gear. For many years the Fairey unit was a popular option for Series vehicles: these have now been out of production for a long time; good ones are hard to find and parts availability is very poor. They have a small oil capacity and tend to leak, so many have been damaged by lack of oil and are extremely noisy, and the only way to test one is to fit it to a vehicle. The input splines (where the overdrive mates to an adapter on the gearbox mainshaft) wear badly and eventually fail.

“Most whine. It is a 78-year-old design, after all”

New overdrives are available from Heystee and Rocky Mountain. The Heystee unit is based on the old Spanish Santana design (itself very similar to the Fairey overdrive): the Rocky Mountain “Roverdrive” is an all-new design. Overdrive or high-ratio transfer box? The Ashcroft conversion is simple, robust and has no extra moving parts to worry about: but it accentuates the existing ratio gap between 3rd and 4th, and only works well with a good healthy engine. I would not recommend it for 2.25 diesels, well-worn petrols, or long wheelbase vehicles used for heavy load carrying or towing. For TDi conversions it is ideal. An overdrive provides extra flexibility (giving you in effect a six-speed gearbox) but is more complex to operate (two gear levers to worry about rather than one) and is rather more expensive (new) than the Ashcroft conversion.

All these gearboxes have the same external dimensions and mounting points, so it is possible to upgrade. There are two bellhousing bolt patterns: one for Series I petrol / 2.6 petrol, and one which fits everything else (2.25 / 2.5 petrol and diesel including 200TDi).

Probably the most popular upgrade is to fit a Series III all-synchromesh gearbox to an earlier vehicle. On the Series III the clutch release mechanism was changed and the slave cylinder will foul the centre crossmember strengtheners on a Series I, II or IIA chassis; you can either cut away the strengtheners, or replace the bellhousing and clutch release with one from a later Series IIA. Note that Series I and II bell housings, and Series IIA up to suffix B, have a smaller layshaft bearing than the later items and will not fit a Series III 'box. The input pinion and layshaft drive gear are a matched pair and should never be mixed up. If the layshaft gear is missing, you will need to buy a new pinion and gear set.

Reputedly the strongest gearbox is the later Series IIA (suffix E or later) followed by the Series III suffix D, which has electro-chemically machined gear teeth and is less prone to jumping out of gear than the earlier 'boxes. But sympathetic use never hurts.



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DISCOVERY

1999 Discovery ES Premium V8, 172,000 miles, AUTO, MOT February 2015, full service history, power steering, 6 CD changer, central locking, electric windows & mirrors, automatic gearbox, dual climate control, full leather seats, heated leather seats, 2 x sunroofs, electric seats, 7 seats, alloy wheels, in good general overall condition, excellent driver, great pulling power, £1695 ono, 07564518925, Windmill Hill.



DISCOVERY 1

1996, 119,000 miles, 300Tdi manual, MOT October 2015, off-roader insa turbo tyres, 2-inch lift, snorkel, spot lights, underbody protection, dislocation cones on rear, heavy duty bumpers, timing belt replaced 3000 miles ago, £1700 ono, Nottingham, 0115 8084508.

SERIES III LIGHTWEIGHT

1974 hard top, freewheel hubs, needs attention for MoT, spare engine, £1000, 07740401110, Northants.



SERIES IIA109

1963, 58,000 miles, petrol, restoration project, engine free, will start with a bit of petrol put down carb, needs welding here and there, surprisingly clean, new rear cross member and hangers included, tax exempt, imported to UK in 1984, keys present, reconditioned gearbox, brakes need attention, loads more done, delivery available at cheap rate, £1750, no offers, Dorset, 07725771659.

RANGE ROVER

2.5 diesel, 1997, 118,000, six cylinder turbo diesel, leather interior, tinted glass, 18" alloys, electrics and air suspension all working, £1995, 07867988311, Dorset.



DISCOVERY 1

1998, 118000 miles, two owners from new, full service history, was purchased in India when new by a British civil servant, came back to Britain with him, never had a tow bar, excellent condition for its year, £2500, Saundersfoot, 01834811020.

DEFENDER 130 PICK UP

1983 200Tdi, Portsmouth, 8 months MOT, runs fine and legal, does need a bit of work to bulkhead and instruments, Nissan Cabstar 10' x 5'. Winch, Kenlow fan, new exhaust, fuel tank, alternator, front coils, £3,000, 07766065385 or admin@ibtportsmouth.co.uk.



FREELANDER 1

2004 TD Sport premium SP, great condition, Metallic Blue, 93,135 miles, Cat C fully repaired to high standard and easily passes MoT, two wheel drive as prop shaft removed, easy to put back to four wheel drive, 18 inch alloys, full leather, heated seats, elec windows and mirrors, heated windscreen superb in winter, nice stereo, CD player, reverse sensors, good price for quick sale, £1300, Stafford, 07867349527.

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Rare 1970 SIIA, Tax exempt, has an MoT, nut and bolt restoration in 2007 on new chassis, 12V 2.25 petrol, new hood, tyres and seat belts, it is in great condition, one of the best you will ever see, £7995, 01983 613 480, Isle of Wight.



DISCOVERY 2

2000 Td5 ES 7seater, 98,000 miles, MOT until June, only 2 lady owners from new, extensive history file containing all invoices for work done including new clutch and flywheel at 87,000 miles, new tyres all round at 94,000 miles, JE Engineering ECU remap, good condition all round except small dent in drivers door, new Land Rover forces sale of this much loved vehicle, £3750, London, 07702 342007.

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DEFENDER 90

1992, Grey, 126,000 miles, 10 month MoT, recent new timing belt, break pipes, very good tyres, 3 owners, present owner 8 years, good clean tidy example for year, 01480 464084 or 07841 511592, £3895, Houghton, 01763 248074.



SERIES IIA

MoT July 2015, 1964 SWB, tax exempt, overdrive, free wheel hubs, rear ladder, tow bar, loads of work done, former military vehicle, 078333795360, £3500 ono.



SERIES III

1968 2.3 petrol engine, has MoT, tax exempt, O/D FWH, parabolic springs, no rust, 07810713755, Wiltshire, £4295 ono.



RANGE ROVER VOGUE

1999 Range Rover 4.6 Vogue, 59,000 miles, dark green metallic with beige leather, 59,000 miles, head gaskets recently done, 4 new tyres, brakes, radiator and thermostat, maintained regardless of cost, fantastic example, everything electric, sunroof, cruise control, alloys, £3995, London, 07597 106302.

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DEFENDER 110

1999, White, 150,000 miles, hard top TD5, new clutch and dual mass flywheel, new turbo, front winch bumper with Wam 9000lb electric winch, heavy duty springs, axle and gear box breathers, Mantec snorkel, ply board in rear, 2 x rotary roof vents, oil and filters changed every 6,000 miles, lots of paperwork to show past MOTs and maintenance, Steel wheels fitted with Cooper Discoverer STT 265/75/R 16 x 5, MOT 27/07/2015, £4950, Coldwaltham, 07745 394162.

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RANGE ROVER

1991, 111,000 miles, Classic 3.9 EFI Vogue Manual, Plymouth Blue, very good condition inside & out, recently serviced including complete ignition system overhauled with new parts, electric sunroof, windows, mirrors, appreciating collectors piece, 10 months MoT, £4500, Swindon, 07815040038.



FREELANDER 2S

2008, 147,000 miles, high mileage but excellent driving, fully checked over by local Land Rover Specialist, 12 months MOT, 6 Speed Gearbox, Air Con, Electric Windows, Central Locking, Parrott Blue Tooth Connection, Most of Service History Known, priced to sell, £5995, Lancaster, 07710453181.

RANGE ROVER VOGUE SE

1990 Plymouth Blue on sorn, low mileage, 36865, garaged, auto, 4 door, one owner from new, £9,000, 01453 549 520, Gloucestershire.



DEFENDER 110

2002 Td5, Left hand drive, 125,409 miles, Very clean SW County, Goes where others fear to tread, driver airbag, four wheel drive, anti-lock brakes, Alarm immobiliser, Safety-belt pre-tensioners, power assisted steering, cassette player, from company sole owner via dealer, Solid undercarriage, heavy duty chassis-supported roof rack, Cargo divider grill, bull bar, front winch-bumper, non-working electric winch, 5 seats, fitted rear shelving can easily be removed along with front cubby box to accommodate 5 more seats, in UK now, imported from Spain, sold with Spanish registration documents, shipping not included but can be arranged, £8695, London, 07740277969.



SERIES III

1980 88-inch Series III soft top. 12 months MoT. Seven seats. Grey, stunning looks. £7990. Lymington. Tel: 01590 670777 / 01590 671355



DEFENDER 110

1994 CSW 300Tdi, 130,000 miles, 11 seats, roof rack, regularly serviced and maintained, lots of receipts for the last four years (recon gearbox/clutch/transfer, turbo), just passed its MoT, Seat belts all round, cubby box, BF Goodrich ATs, Snorkel not included, Minimal rust, very good chassis, some lacquer is peeling on the front wings and roof, 4 previous owners, ring in the evening if interested, £6250, Market Harborough, 07557282234.



AMBULANCE CAMPER

1991 Defender 127 MOD ambulance/camper, 80,000 miles, 3.5-litre V8 petrol engine with a 230L LPG conversion, run well, chassis solid, lots of new parts, lots of camper features added including bunk beds, water tank, fridge, hi-fi, sofa, table, gas stove, kitchen sink, £9500, Long Newnton, 07962867553.

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DEFENDER 90

1998 300Tdi, 98,000 miles, M.O.T until Jan 16, New Front Seats, Lockable Metal Cubby Box, 2 Inward Facing Fold Down Rear Seats, Rear Chequer Plated, New Rear Cross Member, Tow Bar, Safari Snorkel, Steering Damper and Guard, Allard Full Size Intercooler, Silicon Turbo and Cooling Hoses, New Radiator, New Multi-V Drive Belt, 100 Amp (Discovery) Alternator, Boost Alloys (including spare) fitted with BFG AT's, Rear Work Light, Front Spots, £7250, Newton Abbot, 07796 691118.



RANGE ROVER

1984 Rang Rover 3.5 Vogue 4-door automatic. 70,179 miles. Outstanding original condition throughout. Structurally and mechanically in superb order throughout. Has spend its entire life in London, 26 years in the hands of just two families. For many years it was owned and maintained by a classic car engineer and restorer, which accounts for the superb mechanical and structural condition. £6995. South York. Tel: 01226 386920



DEFENDER 90

1997 300Tdi County, Blue, 200,000 miles, Tatsfield, Kent, Serviced and MOT until July 2015, 6 seats, LEZ exempt, immobiliser, undersealed, sunroof, tow bar, radio CD, MP3, alloys, good condition in and out, black checker plate to bonnet, wings, side and rear, 01959 577372 or mayeraj@btinternet.com, £6500, 01959 577372.



SERIES IIA

1969, Blue, 87,000 miles, SWB hard top, engine was replaced with a rebuilt 2.25 petrol unit last year, fitted with parabolic springs and a stainless steel exhaust, LPG conversion with tank behind rear bulkhead, Overdrive, Free wheel hubs, Electric fan, Rebuilt on a galvanised chassis, leather hi-back seats, loads of original features, good collection of spares, £7500, Norwich, 07766748822.

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DEFENDER 110

2001 TD5 hard top, 101,200 miles, 3 previous owners, partial recent service history, MoT Mar 2015, Quality Thatcham CAT1 alarm/immobiliser, 2 x keys & remote alarm fobs, CD Player with in-built Bluetooth Handsfree & iPhone/iPod/USB compatible, Rock/Tree Sliders (original sills included), Adjustable Tow Bar + Single 9-pin Electrics, Genuine Land Rover Removable Load Area Mesh Security Screen, 'A' Bar + Hella spotlights, Rear Step, recent new HD Battery & Front XD Brake Pads. Good Solid chassis. Starts first time, reliable runner. 5 x good quality AT tyres with excellent tread on original Land Rover HD steel wheels. Original engine, no tuning or mods. Very original vehicle, £5995, Preston GB, 07833 738411.

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DEFENDER 90

1996, Blue, 164,124 miles, 300Tdi, MOT till Feb 2016, always garaged, great runner, always serviced, lots of extras including 9000lb waterproof Superwinch with flair lead & roller, Front spotlights, roof mounted spot lights, LED side lights/indicators/ reverse, rear work light, black chequer plate fitted on: bonnet/wing tops/rear quarters/rear door, tree sliders, rock sliders, removable rear tow bar, front mounted tow bar, sump guard, steering guard, front and rear diff guards, fuel tank guard, snorkel with front & rear diff breathers, adrenalin rear torsion bars, 3" + lift kit, 4x new BF Goodridge mud terrain tyres, heavy duty wheel arch extensions, side exit exhaust, Raptor dash with cb radio, complete sound deadening kit, rear side panel sound deadening boards, Genuine Land Rover rear side facing folding seats, bulkhead lowering conversion, cubby box, sunroof, sport steering wheel. This is an off road toy and as expected it has the odd dents and scratches, it's a great truck so come and grab a bargain, £5000 ono, Lincs GB, 07932033411.



DEFENDER 90

1989 300Tdi, Green, 82,057 miles, loads of repairs done, enquire for details, Fully lined interior, Alloy wheels and spare, Tow bar with electrics, Snorkel, Front winch bumper (no winch), Full roll cage, diff and side protection with light bar, 6 seats (Exmoor trim), AM/FM stereo with hands free kit, the first to view will buy it, Front Runner roof rack and roof box have been removed, £5950, Basingstoke, 07908124557.



DEFENDER 90

1999, Green & White, 117,000 miles, MOT until January 2016, Tow bar and dog guard, steam cleaned and Waxoyl renewed to chassis, wheel bearings & clutch all sorted, sliding side windows and bench type rear seats, runs really well, good tyres and condition for a 1999 vehicle, call 07847 606773 between 7pm and 9pm Monday to Friday and between 7am and 9pm at weekends, or email kgbbf231@btinternet.com, £6850, 07847 606773.

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Range Rover Sport TDV6 HSE Autobiography. 135,000 miles. Full Service history, cambelt replaced, 22in" ONYX alloys, colour coded, 2010 body kit, rear spoiler, exhaust tips, electric memory seats, Bi-Xenon headlights, electric folding mirrors, front & rear park distance control, heated seats, cruise control. Parking sensor not working, Power Steering has intermittent fault and needs brake service - hence price. Just £16,295. Bradford. Tel: 01274 734657 / 07896 056696.



DEFENDER 110

2004 TD5 XS Station Wagon, 81,000 miles, stunning Santorini black, 9 seater with black half leather heated seats, electric windows, central locking, new boost alloys & side runners, KBX front grill & vent upgrades, daylight running lamps with new front bumper, service invoices available, excellent condition, £14,750, Isle of Man, 07624 493107.

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DEFENDER 110

1997 hard top 300Tdi, Sand, 139,000, ready for expeditions, vehicle in Johannesburg, South Africa, exhaustive list of equipment includes: Full Roofrack plus rear ladder, EazyAwn Side opening Rooftop tent, Safari Snorkel, 12L Gas bottles holder gas bottles, 2 Burner stove, Engel 40L fridge, FeatherLite Side awning, Rock sliders/Sand ladders, High lift jack and Sand plate, 40L Water tank, 40L Long range tank, Bullbar, Tow Bar, Dual battery system, 800 Watt Inverter, two spare wheels, straps, spares, tools, Work light, Spot lights, loads of camping gear, lots of other accessories, 11,880 Euro, Johannesburg ZA, +358402504620.



6X6 DEFENDER 110

1989, 14,800 miles, Australian army defender 110, Isuzu turbo diesel engine, 4 speed manual, disc brakes on all wheels, twin fuel tanks, genuine 14,800 kms, tray back model, carry over 2 tonne, load sharing rear suspension, VGC, located in Australia, A\$16,250, +61412757327.



DEFENDER 110

2009 XS SW LWB, Black, 71,000 miles, dealer fitted roof rack and ladder, Parrot hands free kit, Air conditioning, electric front windows, heated front seats, cd/radio. Good condition, new discs and brake pads fitted September 2014 (2,000 miles since), 12 months MOT, service history, selling due to move abroad, £17995, Hindhead, 07780994075.



DEFENDER 110

2000 Td5 CSW, 150,000 miles, Nene Overland prepared, Dinitrol anti rust treated, service history, owned since 2008, metallic dark blue, factory tinted glass, alloy wheels, roof rack, awning, A bar, Hella spot lights, Cubby box, Radio/CD with hands free and 4 speakers custom mounted, carpet + rubber floor mats, extra sockets for phone, GPS, cool box, EGR blanking plate, upgraded ECU, Mantec spare wheel carrier, aluminium steering guard, work light, dog guard, lockable box, raised air intake, leather steering wheel, checker plate, tow bar front and rear, recent rear shocks, radiator, battery, bearings, Maintained regardless of cost by Chichester 4X4, 12 months MOT, £11,250, West Sussex, 07970289618.

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1978 Santana, 10,000 miles, very rare build, Vehicle n° 249 - only approval in Italy MTC Latina, Diesel Engine 6-cylinder 3429 cc Licensed Rover, Permanent 4WD transmission with locking centre differential, over drive, brake booster. 3 car doors, 9 seats - enrolled ASI, general terms discrete, different spare parts, visible in Lucca - Italy, 13200 Euro, 00393388375282.



DISCOVERY 3

2007, 63,800 miles, HSE, rare manual on a 57 plate, colour TV, touch screen display, fridge, front and back heated seats, panoramic roof, climate control, automatic lights, cruise control, audio controls with headphone sockets,, Multiple airbags, front and rear parking sensors, aircon, voice activated controls,, 7 seats, Bluetooth hands free, electric seats, 6 CD changer, Harman logic 7 sound system, full specialist and dealer history, Just been serviced with Pirelli scorpion tyres all round, Electric sunroof, Electric windows, Satellite navigation, Parking aid, CD player, Leather trim, Heated seats, Folding rear seats, Metallic paint, 19" Alloy Wheels, Spare wheel (Full), Power steering, Steering wheel rake adjustment, Traction control, Central locking, Alarm, Immobiliser, Driver airbags, Side airbags, Passenger airbags, £14000, Exeter, 07510084835.



DEFENDER 90

1989 Defender 3.9 V8, galvanised chassis, Santorini Black, 120,000 miles, MOT from Nov 2014, fully serviced in Nov 2014, all the history from service history from before the renovations available, loads of new parts, completely rebuilt from scratch by a Land Rover Specialist, only original components are the wings, bonnet, roof box and dashboard, 3.9efi V8 Engine with 4 speed automatic gearbox and transfer box, long list of new parts, £17500, Nottingham, 02081238766.



DEFENDER 90

2013 hard top, Firenze Red, 6000 miles, purchased privately in July 2013, comes with rear windows, rear bulkhead removed at factory, extended seat rails, lots of room, colour matched roof and wheels arches, rear kitted out in stainless and rubber checker, loads of other extras, contact me for details, never been off-road, full history, £21500, Comrie, 01764 671022.



SERIES III

1974 Land Rover Series III soft top. Just 66,000 miles, sitting on galvanised chassis. Tax Exempt from April 2015. Subject of a sympathetic rebuild over the last few years. Refurbished bulkhead, overdrive, top quality respray

in original pastel green, unleaded cylinder head, new Weber carb, new fuel tank, new distributor, new swivels, new parabolic springs, new canvas roof. Lovely to drive. £18,995.

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DEFENDER PARTS

Windscreen light bar with 4 lamps & aerial bracket for £40, Terrafirma cubby box, no key, £50, CB radio president harry with aerial and long cable, £25, 2 x rear fold out Exmoor trim seats with LR logo on base and back, as new £200, Longwick, 07907071313.



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Performance model
is hugely popular

Words: Dave Phillips

SPORT IS ON A WINNING STREAK



ALL LAND ROVERS see a rise in prices in winter when the fear of extreme weather grips the nation and families opt for the security blanket of a big 4x4. As always, Defender and Discovery are popular, but one of the biggest sellers this time around has been the Range Rover Sport.

It is hardly the typical car for ice, snow and floods, yet it has been flying off the forecourts. But that doesn't surprise some experts.

Head of Valuation Services at MyCarCheck.com, Gavin Amos, said: "The Range Rover Sport is highly desirable. Thanks to a winning combination of luxury and performance, this go-anywhere SUV is both versatile and prestigious.

"Always in demand, even older examples don't come cheap. However, so long as you do a history check to ensure the one you're looking at is what it claims to be — for instance, that it isn't still on finance — the RR Sport has a lot going for it.

"Retail demand in the used car market always picks up in January. Proactive dealers have spent the quiet period buying stock, with a view to having a great line-up in place to meet the rising demand.

"At the time of writing, the majority of the country hasn't seen much snowfall, but demand remains relatively strong in this sector and the crossovers sector

continues to grow whatever the weather. Any prolonged drop in temperature will see demand for true 4x4 examples surge," he added.

Again, Land Rovers are the winners. While the evergreen Defender remains the car of choice for UK buyers looking for a big, tough, workmanlike 4x4, sales of its main rivals — the ubiquitous twin-cab Japanese pick-up — is suffering a sales slump at the time of writing.

Meanwhile, the aforementioned Range Rover Sport goes from strength to strength, with both first-generation and recent models holding up well.

But although the Sport has grabbed the media spotlight thanks to its legendary supercharged V8 petrol engines, it is the SDV6 diesel engine that is the popular option. The latter doesn't feel under-powered compared to the big petrol, yet returns much better economy.

Although the Sport doesn't have the same roomy versatility as the Discovery 3/4, which double up as box vans with the seats folded down, the second-generation Sport can accommodate seven (at a push) and its on-road handling is far superior.

There is also the little matter of appearance. The Disco 3/4 shape has been around more than a decade now and it definitely looks dated alongside the Sport, which is acknowledged as one of the best all-rounders available today.

MADE IN CHINA

THE FIRST Land Rovers to be built in China have rolled off the production line at Changsu, where JLR opened a factory with Chinese automotive partners Chery.

The first vehicles built in the Anglo-Chinese collaboration have been five-door Range Rover Evoques, available in three variants.

The basic model features Land Rover's Terrain Response system, an eight-inch infotainment touchscreen, eight-way power adjustable driver and passenger seats, panoramic sunroof, and parking sensors on the front and rear bumpers.

The middle variant adds an 825 Watt Meridian sound system, adaptive front headlamps, and blind spot monitoring system for extra safety.

The top of the range also has 20-inch wheels and 10-way power adjustable driver and passenger seats.

The first models are being sold in China for about 400,000 Chinese Yen (about £40,000).

Three-door Evoques will continue to be imported from the UK.

Meanwhile, the first Indian-built Discovery Sports are due to emerge from Tata's Pune factory in August.



EARLY SERIES I

80" 1948 – 1953

THE ORIGINAL 80-inch Land-Rover is now a very desirable classic, with prices to match. The earlier and more original, the better. Even derelicts fetch good money. 1948-50 examples are the most sought-after, with pre-production and historic examples the most desirable. They are still turning up in the corners of old barns. The Holy Grail of Land Rovers is the centre-steer prototype from 1947, if it still exists. Post-1950 models offer the best value.

BUYER'S TIP: Join the Series I Club for parts and advice.

SPECIFICATIONS

1948-1951: 1.6-litre four-cylinder petrol, 55 bhp, 83 lb-ft torque. Four-speed manual, two-speed transfer box with permanent four-wheel drive (to 1950), later selectable. **1951-1953:** 2-litre four-cylinder petrol engine, 52 bhp, 101 lb-ft.

PRICE GUIDE

Project: £2000 – £5000
Average: £5000 – £6500
Good: £6500 – £15,000
Excellent: £15,000 – £50,000+



LATER SERIES I

86", 107", 88", 109" 1953 – 1958

THERE is no such thing as a cheap Series I, but the later models are less pricey than the early ones. They are also more user-friendly as the inherent faults were ironed out as the years passed. The distinctive 107-inch Station Wagons look like they're built from giant Meccano, are extremely sought-after, and fetch good prices. The long wheelbase pick-ups represent good value. Rust is a problem, so check any prospective purchase.

BUYER'S TIP: These are the most driveable Series Is.

SPECIFICATIONS

2-litre four-cylinder petrol engine, 52 bhp, 101 lb-ft torque. Also, from **1957**, 2-litre four-cylinder diesel, 52 bhp, 87 lb-ft torque. Four-speed manual, two-speed transfer box with selectable four-wheel drive.

PRICE GUIDE

Project: £2000 – £4000
Average: £4000 – £6500
Good: £6500 – £15,000
Excellent: £15,000 – £50,000+



SERIES II/SERIES IIA

88" AND 109" 1958 – 1971

IN 1958 the introduction of the Series II heralded the classic Land Rover shape. But if you want one, snap it up fast, because Series IIs are following in the footsteps of Series Is and becoming very desirable – especially pre-1961 and MoT-exempt models. Some have been retro-fitted with Tdi engines, which aren't authentic but make them easier to keep up with modern traffic. A SII should be a good ride but check the leaf springs aren't badly rusted.

BUYER'S TIP: Most parts still cheap and plentiful.

SPECIFICATIONS

1958: 88s, diesels to 1961 and all transmissions same as Series I. **1958-1971:** 2.25-litre four-cylinder petrol, 77 bhp, 124 lb-ft torque; 2.25-litre four-cylinder diesel, 62 bhp, 103 lb-ft torque. **1967-1971** (109 only): 2.6-litre six-cylinder petrol, 81 bhp, 132 lb-ft torque.

PRICE GUIDE

Project: £800 – £2200
Average: £2200 – £3800
Good: £3800 – £6000
Excellent: £6000 – £14,000



SERIES III

88" AND 109" 1971 – 1985

A DECADE ago the Series III was the entry-level Land Rover. But times change and today SIIIs are appreciating in value. But they still make affordable restoration projects, as parts are readily available and reasonably priced. The simplicity of the design makes them ideal for the home mechanic. Tidy originals command higher prices – especially station wagons. The Stage One V8 is particularly sought-after – especially the ultra-rare short wheelbase version.

BUYER'S TIP: There's never been a better time to buy.

SPECIFICATIONS

2.25 petrol/diesel and transmissions as Series IIA, 2.6 six-cylinder produced up to **1979**. **1979-1985 Stage One V8** (109 only): 3.5-litre V8 petrol, 91 bhp, 166 lb-ft torque. LT95 four-speed manual with permanent 4WD.

PRICE GUIDE

Project: £700 – £2100
Average: £2100 – £3600
Good: £3600 – £6000
Excellent: £6000 – £14,000



MILITARY LIGHTWEIGHT

88" SERIES II AND SIII 1968 – 1984

THE no-nonsense version of the Series Land Rover, built for the armed forces. In 1972 the military Series III got the same mechanical upgrades as the civilian model, with a five-bearing petrol engine and improved gearbox with synchromesh on all forward gears, as well as an alternator to replace the old dynamo. Today, Lightweights are in big demand with enthusiasts: good ones fetch serious money.

BUYER'S TIP: They're cold, draughty – and huge fun!

SPECIFICATIONS

2.25 petrol engines and transmissions as for Series IIA and Series III

PRICE GUIDE

Project: £1200 – £2500
Average: £2500 – £6000
Good: £6000 – £8000
Excellent: £8000 – £18,000





RANGE ROVER 1 (CLASSIC)

1970 – 1996

EARLY three-door examples command the serious money, but rarity – and classic car collectors – are pushing prices up. Steel body panels are very rust-prone and some body and trim parts are getting difficult to source. V8s are expensive to run, but 200Tdi and 300Tdi diesels are very frugal. Later models represent the best value and prices are rising. A late Vogue SE or 4.2 LSE is extremely desirable – with values steadily going up.

BUYER'S TIP: A late Tdi is a practical everyday motor.

SPECIFICATIONS

1971-1983: 3.5-litre V8, 125 bhp, 185 lb-ft torque. **1986-on** 3.5 EFI: 165 bhp, 206 lb-ft. **1989-1996:** 3.9 EFI V8, 185 bhp, 235 lb-ft or 4.2, 200 bhp. **1986-1992:** 2.4 VM turbo diesel, 112 bhp, 183 lb-ft, later 119 bhp 2.5.

PRICE GUIDE

Project: £1800 – £3100
Average: £3100 – £5200
Good: £5200 – £7500
Excellent: £7500 – £100,000+



FORWARD CONTROLS

SERIES IIA, IIB (1962 – 72) 101 (1972 – 78)

THE Series IIA and IIB models were aimed at the civilian market: big capacity payloads for farmers, builders and the like, but marred by under-powered 2.6-litre six-cylinder petrol engines. The later 101 Forward Control was a no-nonsense military gun tractor with typical V8 petrol thirst and is a big beast in every respect. Some parts can be hard to find, but there is good clubs back-up with loads of enthusiasm.

BUYER'S TIP: Massive following among enthusiasts.

SPECIFICATIONS

SIIA/IIB: 2.6-litre six-cylinder petrol, 81 bhp, 132 lb-ft torque. **101:** 3.5-litre V8 petrol, 128 bhp, 185 lb-ft torque. Four-speed LT95 gearbox with permanent four-wheel drive.

PRICE GUIDE

Project: £2300 – £3750
Average: £3750 – £5000
Good: £5000 – £7000
Excellent: £7000 – £15,000



NINETY/ONE TEN

1983 – 1990

THE very first of the coil-sprung utilities still retained the 2.25 engines from the outgoing Series III, but they were soon replaced by 2.5 units, plus an 85 bhp turbodiesel in 1986. Prone to rust if not looked after, but good ones defy the years and continue to perform. No shortage of spares. Many retro-fitted with later Tdi engines. Prices are rising – not least because ones more than 25 years old can be legally exported to the USA.

BUYER'S TIP: A good investment for the future.

SPECIFICATIONS

1983-1985: Engines as Series III/ Stage One V8. LT77 five-speed fitted to four-cylinder models. **1985-1990:** 2.5-litre petrol, 80 bhp, 129 lb-ft torque; 2.5 diesel, 68 bhp, 113 lb-ft; 3.5 V8 petrol, 113 bhp, 185 lb-ft, 134 bhp from 1986. LT85 five-speed fitted to V8 models.

PRICE GUIDE

Project: £1600 – £2800
Average: £2800 – £4000
Good: £4000 – £6000
Excellent: £6000 – £13,000



DISCOVERY 1

200TDI/300TDI/V8 1990 – 1998

LAND ROVERS don't have to be expensive. If you're looking for a bargain, the Disco 1 is very affordable. The original Discovery is capable off-road and refined on it, but serious rust is a big problem. Check out the boot floor, chassis and inner wings. If you're handy with a welder, there's nothing that can't be sorted. 200Tdis and 300Tdi engines are more or less bulletproof if regularly serviced. Prices starting to rise now as collectors move in on better early examples.

BUYER'S TIP: Rapidly becoming collectable.

SPECIFICATIONS

200Tdi: 1989-1994. 2.5-litre turbo diesel. 111 bhp, 195 lb-ft torque. LT77S five-speed transmission. **300Tdi.** 1994-1998. 2.5-litre turbo diesel. 111 bhp, 195 lb-ft torque. R380 five-speed transmission. V8s as Range Rover Classic.

PRICE GUIDE

Project/trade: £300 – £800
Average: £800 – £2400
Good: £2500 – £4100
Excellent: £4100 – £6900



DEFENDER 200TDI

1990 – 1994

LAND ROVER'S 200Tdi engine, designed for the Discovery, also ended up under the bonnet of the Ninety and One Ten, which were renamed Defender 90 and 110. This was the beginning of the golden era of Defenders – and many would argue the greatest vehicles ever built. There is still a good supply of engines and gearboxes from scrapped Discoverys of the same era.

BUYER'S TIP: A good one may rise in value.

SPECIFICATIONS

2.5-litre turbo-charged, direct-injection diesel. 107 bhp, 195 lb-ft torque. LT77S five-speed transmission.

PRICE GUIDE

Project: £2500 – £3500
Average: £3500 – £6000
Good: £6000 – £12,000
Excellent: £12,000 – £35,000



RANGE ROVER 2 (P38A)

1994 – 2002

BETTER than some would have you believe, the second-generation Range Rover's reputation for unreliability is often undeserved. Prices are very low for a luxury 4x4. If you are handy with electrics and a laptop computer, you can use diagnostic software to solve most problems, although replacement parts can be pricey. The diesel option is a BMW six-pot turbo – a bit underpowered for such a heavy vehicle. No serious rust issues.

BUYER'S TIP: Great value for DIY auto electricians.

SPECIFICATIONS

4.0: 4-litre V8 petrol, 185 bhp, 235 lb-ft torque. **4.6:** 4.6-litre V8 petrol, 225 bhp, 277 lb-ft torque. **2.5:** 2.5-litre six-cylinder turbo diesel, 134 bhp, 199 lb-ft torque. R380 manual or ZF four-speed auto, permanent four-wheel drive.

PRICE GUIDE

Project/trade: £300 – £800
Average: £800 – £2300
Good: £2300 – £3700
Excellent: £3700 – £7000



FREELANDER 1

1997 – 2006

AFFORDABLE ENTRY-LEVEL Land Rover, but looking dated now. The petrol engines are troublesome and best avoided. The more valuable older diesel is reliable, economical and not complicated, but make sure it has been properly serviced, with particular attention to timing belt renewal. The later TD4 is more complicated but is chain-driven so no timing belt worries. Happily, Freelander has no rust issues to worry about.

BUYER'S TIP: Avoid the 1.8 petrol: Td4 diesel is best.

SPECIFICATIONS

Petrol: 1.8-litre four-cylinder petrol, 118 bhp, 121 lb-ft; 2.5-litre V6 petrol, 177 bhp, 177 lb-ft torque. **Diesel:** 1997-2000: 2-litre Rover four-cylinder turbo diesel, 96 bhp, 155 lb-ft torque. R380 five-speed transmission. 2000-2006: 2-litre BMW Td4, 110 bhp, 192 lb-ft.

PRICE GUIDE

Project: £400 – £700
Average: £700 – £1900
Good: £1900 – £3300
Excellent: £3300 – £5600



DEFENDER 300TDi

1994 – 1998

WHEN THE Discovery1 received the refined new 300Tdi engine, so did its Defender stablemate. These Defenders are as popular as ever because they are reliable, simple and easy to modify. Biggest demand is for the short wheelbase 90s – LWB 110s are usually cheaper. Good ones hold on to their value and will always be easy to sell. The 300Tdi is a legendary lump that is good for 250,000 miles if properly serviced, with timing belts changed at correct intervals.

BUYER'S TIP: Highly desirable, so invest in good security.

SPECIFICATIONS

2.5-litre turbocharged, direct-injection diesel. 111 bhp, 195 lb-ft torque. R380 five-speed transmission.

PRICE GUIDE

Project: £2700 – £3500
Average: £3500 – £6200
Good: £6200 – £12,000
Excellent: £12,000 – £40,000



DISCOVERY 2

1998 – 2004

MUCH more than a revamp of the original, the Disco 2 kept the stepped-roof looks and basic shape, but little else. An improved chassis, bodyshell and suspension, along with new engines and axles made this the best-handling Land Rover in its day. Thousands were sold so there are plenty to choose from. The Td5 diesel is economical; V8 petrols expensive. Bodies last well but chassis can suffer very serious corrosion. Values falling.

BUYER'S TIP: Carefully check that chassis for rust.

SPECIFICATIONS

Td5: 2.5-litre five-cylinder turbo diesel, 122 bhp, 221 lb-ft torque. **V8:** 4-litre V8 petrol, 185 bhp, 235 lb-ft torque. R380 manual or ZF four-speed auto, permanent four-wheel drive.

PRICE GUIDE

Poor: £1200 – £1800
Average: £1800 – £2500
Good: £2500 – £3800
Excellent: £3800 – £7900



DEFENDER TD5

TD5 1998 – 2007

THE five-cylinder Td5 was the last Land Rover-derived diesel engine and its introduction coincided with the era when Defenders started to become trendy and the typical Td5, with metallic paint and alloy wheels, was often seen in city centres. There are a good number of special editions to choose from and, if you are looking for a utility vehicle, a huge number of truck cabs and hard tops are always on sale. Reliable, but check service history.

BUYER'S TIP: A great all-rounder.

SPECIFICATIONS

2.5-litre five-cylinder turbo diesel, 122 bhp, 221 lb-ft torque. R380 five-speed transmission, permanent four-wheel drive.

PRICE GUIDE

Poor: £4000 – £5000
Average: £5000 – £7000
Good: £7000 – £12,000
Excellent: £12,000 – £17,000





RANGE ROVER 3 (L322)

2002 – 2012

THE THIRD-GENERATION Range Rover remains a vehicle to aspire to. Earlier examples are very affordable, but don't underestimate the running costs – especially from the petrol V8s. The Td6 is more economical. Drivetrain and electric problems are not unknown, but most electronics can be sorted with modern diagnosis equipment. These vehicles don't go wrong very often, but when they do replacement parts can be pricey.

BUYER'S TIP: Prices falling – bargains to be found.

SPECIFICATIONS

2002-2005: 4.4-litre BMW V8 petrol, 282 bhp, 325 lb-ft torque.
2002-2007: 3.0-litre BMW Td6 turbo diesel, 177 bhp, 287 lb-ft torque.

PRICE GUIDE

Poor: £4000 – £5000
Average: £5000 – £7500
Good: £7500 – £13,000
Excellent: £13,000 – £42,000



DISCOVERY 3

2004 – 2009

THE SHORTEST-LIVED Land Rover model of modern times, with a production run of just five years before it was replaced by Discovery 4. Early models suffered reliability issues, usually caused by water ingress into the electrics. Running costs are high on the thirsty (ex-Jaguar) 4-litre V8 petrol models, but the vast majority of secondhand models are economical 2.7 V6 diesels, which offer much more sensible running costs.

BUYER'S TIP: Check that everything electrical works.

SPECIFICATIONS

2.7-litre V6 turbo diesel, 190bhp, 324 lb-ft torque.
4.4-litre V8 petrol, 300bhp, 313 lb-ft.

PRICE GUIDE

Poor: £4000 – £6000
Average: £6000 – £9000
Good: £9000 – £11,000
Excellent: £11,000 – £17,000



RANGE ROVER SPORT 1

2005 – PRESENT

THE SPORT performs the fast premium 4x4 role with style. It shares the same platform as the Discovery 3/4 and is just as impressive off-road. A great long-distance cruiser and entertaining on the right roads, but if you need load-carrying capacity a versatile Discovery is better. Tyres, brakes and suspension tend to have a hard time, so buy carefully. Despite being replaced by the second-generation Sport, early models don't look at all dated.

BUYER'S TIP: Good ones are in demand (see page 198).

SPECIFICATIONS

2005-2009: 2.7-litre V6 turbo diesel, 190 bhp, 324 lb-ft. 4.4-litre V8 petrol, 300 bhp, 313 lb-ft.
Supercharged V8 390 bhp, 406 lb-ft. 2009-on: 3.0-litre V6 diesel, 244 bhp, 442 lb-ft. 3.6-litre TDV8 diesel, 272 bhp, 472 lb-ft.

PRICE GUIDE

Poor: £10,000 – £12,000
Average: £12,000 – £14,000
Good: £14,000 – £16,000
Excellent: £16,000 – £50,000



DEFENDER TDCi

TDCi 2007 – PRESENT

SIX SPEEDS, an all-new dashboard and a four-cylinder Ford turbo-diesel borrowed from the Transit van were all in 2007's major revamp. The loss of front air vents and the distinctive humped bonnet aren't to everyone's taste but the brilliant off-road ability remains. Not everybody loves the six-speed gearbox, though. The original 2.4-litre engine was replaced for 2012 with a new 2.2 with improved emissions. UK production ends late this year.

BUYER'S TIP: Values should hold well for a long time!

SPECIFICATIONS

2007-2012: 2.4-litre four-cylinder turbo diesel, 122 bhp, 221 lb-ft torque. 2012-on: 2.2-litre four-cylinder turbo diesel, 122 bhp, 265 lb-ft torque. Six-speed MT85 gearbox, permanent four-wheel drive.

PRICE GUIDE

Poor: £6200 – £8200
Average: £8200 – £12,100
Good: £12,100 – £17,500
Excellent: £17,500 – £50,000



FREELANDER 2

2006 – PRESENT

A BIG improvement on Freelander 1. Lack of low range and ground clearance remains a disadvantage off-road, but few buy Freelanders for hardcore off-roading. The towing capacity is just 2000 kg compared to the 3500 kg of bigger Land Rovers, but it's a worthy alternative to a Discovery – reasonable on fuel and has a decent-sized boot. No rust issues and ultra-reliable. Hold values well but this could change with end of production.

BUYER'S TIP: About to be replaced by Discovery Sport.

SPECIFICATIONS

2.2-litre four-cylinder turbo-diesel, 150 bhp, 295 lb-ft torque. Six-speed manual gearbox with optional stop/start (eD4) or six-speed automatic. Permanent four-wheel drive.

PRICE GUIDE

Poor: £6000 – £7000
Average: £7000 – £9000
Good: £9000 – £12,500
Excellent: £12,500 – £23,000



DISCOVERY 4

2009 – PRESENT

ON THE outside it looks just like its predecessor, the Discovery 3 – and they certainly share a few body panels – but under the skin this is a very different animal, with a powerful new diesel engine and all the reliability issues of its predecessor ironed out. Six years on, this brilliantly versatile vehicle is as popular as ever. It's a true seven-seater but fold those seats flat and you've got a cargo area comparable to a Transit van. The ultimate family car.

BUYER'S TIP: The very best tow car, bar none.

SPECIFICATIONS

3.0-litre V6 turbo diesel, 244bhp, 442 lb-ft torque.

PRICE GUIDE

Poor: £10,000 – £16,000

Average: £16,000 – £19,000

Good: £19,000 – £25,000

Excellent: £25,000 – £60,000



RANGE ROVER EVOQUE

2011 – PRESENT

NOT a favourite with Land Rover enthusiasts, but a huge hit with the general public who have turned it into Land Rover's best-selling model. Two-wheel drive is more economical, but 4WD is the better performer (and it's not bad off-road). The first one rolled off the production line at Halewood in 2011, and has been a huge success ever since. There are already plenty available on the secondhand market – and some bargains to be had. Very reliable.

BUYER'S TIP: Plenty to choose from, so be picky.

SPECIFICATIONS

2.2-litre four-cylinder turbo diesel, 147 bhp or 197 bhp; 2-litre petrol, 237 bhp. Six-speed manual or automatic gearbox. Two-wheel and four-wheel drive.

PRICE GUIDE

Poor: £9,000 – £14,000

Average: £14,000 – £17,500

Good: £17,500 – £23,000

Excellent: £23,000 – £42,000



RANGE ROVER 4 (L405)

2012 – PRESENT

THE FOURTH GENERATION Range Rover with its aluminium chassis means it's 420 kg lighter than its predecessor and, coupled with efficient new diesel engines, it's more frugal than any previous Range Rovers. But it's all comparative! Taking depreciation into account, it will be several years before secondhand models offer economical motoring for all but the well-heeled. At present, values holding well.

BUYER'S TIP: A lot of car if you've got deep pockets.

SPECIFICATIONS

3-litre V6 (258 bhp) and 4.4-litre V8 (339 bhp) turbo-diesel engines; supercharged 5-litre V8 petrol (510 bhp). Eight-speed automatic gearbox.

PRICE GUIDE

Poor: N/A

Average: £39,000 – £45,000

Good: £45,000 – £64,000

Excellent: £64,000 – £100,000+



RANGE ROVER SPORT 2

2013 – PRESENT

LAUNCHED IN 2013, and now cascading down to the secondhand market, but a new RR Sport 2 may prove tempting to the would-be buyer of a secondhand Range Rover 4. Performance, handling and economy are all better than its big brother – and a new one is £20,000 cheaper. Although few will try it, it's a brilliant off-road performer, too, and can answer all the questions in the rough. Like all modern Land Rovers, it has a reputation for reliability.

BUYER'S TIP: This is a future classic in the making.

SPECIFICATIONS

3-litre TDV6 (254 bhp) and SDV6 (288 bhp) turbo diesel engines; supercharged 5-litre V8 petrol (503 bhp). Eight-speed automatic gearbox.

PRICE GUIDE

Poor: N/A

Average: £39,000 – £42,000

Good: £42,000 – £49,000

Excellent: £49,000 – £75,000



DISCOVERY SPORT

2015 – PRESENT

THE NEW kid on the block. On paper it replaces the Freelander 2, but in reality it is a very different beast altogether. Like all Land Rovers, it is built to be best in class off-road, but its astonishing on-road handling is something else. LRM editor Dave got to drive it for hours on solid ice, in Iceland, and it never put a foot wrong. Considering its lavish spec, it represents excellent value for money, too.

BUYER'S TIP: There's big demand: join the waiting list!

SPECIFICATIONS

2.2-litre SD4, 190bhp. Six-speed manual and nine-speed automatic gearboxes.

PRICE GUIDE

Poor: N/A

Average: N/A

Good: N/A

Excellent: N/A

(new prices start at £32,395)

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MAY 2014

25TH BIRTHDAY of the 200Tdi engine; new-build 300Tdi Defender; One-owner Range Rover Classic and SIIB Forward Control; Pro jacks test; farm find SIII V8; Td5 rebuild; Freelanders greenlaning



JUNE 2014

STAGE 1 V8 rebuild; Td5 engine swap; Discovery 2 transformed; Time-warp 300Tdi Defenders; Woburn Safari Park Defenders; Defender leaks cures; Ninety and One Ten Survival Guide



JULY 2014

HEAD TO DEAD: Defender 200Tdi, 300Tdi, Td5 and TDCi; Overfinch Classic vs RR Sport; Series III race rescue; Discovery Concept unveiled; Series III Survival Guide; Td5 engine swap; Technical Q&A



AUGUST 2014

FRED DIBNAH'S Series IIA; P38 Range Rover's 20th birthday; V8 Survival Guide; Lundy Island Land Rovers; Devon greenlanes; Power steering conversion; Tech Q&A; Four generations of Discovery



SEPTEMBER 2014

DEFENDER gets 412 bhp Mustang V8; 10 years of Discovery 3; L322 Range Rover Survival Guide; Ant Anstead's Series I; Original Overfinch Range Rover; Defender soft top conversion; Series Q&A



OCTOBER 2014

FULLY-LOADED expedition Defender; rare Discovery 1 prototype; Series III upgrade; Freelander 2 Survival Guide; Bespoke 90 road test; Socket sets tested; swivel housings replaced; Workshop Q&A



NOVEMBER 2014

DEFENDER off-road tips and tricks; 25 years of Discovery 1; Series IIA and Range Rover restorations; Defender TDCi Survival Guide; Lincolnshire greenlaning; Td5 super service; Discovery 3 fuel pump



DECEMBER 2014

DEFENDER Icon 3.2; Range Rover Sport Survival Guide; Across the Great Divide; Algarve Adventure; Defender TDCi clutch; Replace body cappings; Series I dedication; Cotswolds greenlaning



JANUARY 2015

ULTIMATE Land Rover Buying Guide; Stunning early Range Rover Classic; Survival Guide: 2.25 petrol engine (part 1); Essex greenlanes; Discovery Mpi; Bulkhead repairs; P38 ABS system; Classic Q&A



FEBRUARY 2015

WINTER Driving Advice; Christmas Gift Guide; New Forest Defenders; Stage One V8 Project completed; Holland & Holland Range Rovers; 2.25 petrol engine (part 2); Series II rebuild; Freelander 2 service



ISSUE 200

HISTORY of LRM; Discovery Sport: 1st drive; 1998 Anniversary Defender V8; Engines of the future; Tanzania safari; Series I restoration; Td5 engine explained; Discovery front bearings; Classic Q&A



MARCH 2015

SUPER-FAST 6.2 V8 Defender; Herefordshire greenlaning; Range Rover Evoque Survival Guide; Electric Defender; Freelander Service Guide; 6x6 Defender; Around the World Adventure; Classic Q&A

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[DAN WARDEN, ELECTRICAL ENGINEER, BANBURY] 1973 SERIES III 109 1-TON

What's the story?

I first saw this ex-cherry picker on eBay; it was just a pile of bits back then. It has a rather interesting and colourful past as a rare 1-Ton that was owned by Southern Electricity (SEB). You could say that I am a collector, as I already have a SIIA 1-Ton and another Series III version. In addition to these beauties I also have an ex-SEB 1966 SWB.

How long have you owned it?

I have only had it a few months and I didn't get it home until November last year. It's very much a work in progress.

Is the engine solid?

It was built with the six-cylinder petrol engine. Someone made a start by fitting a four-cylinder petrol engine but never finished it. I will take the four out and fit a six, as that is how it was meant to be.

What are your plans with it?

It will eventually get a new chassis and once that's done and it's back on the road, I will hunt down the correct cherry

picker for it. It needs to look like the working SEB cherry picker it once was.

What have you done so far?

Just little jobs like getting rid of the rotten seats and replacing missing lamp lenses. I also took the PTO off and took photos of all the little details such as tyre pressure script, just in case things get damaged and have to be replaced.

What next?

Bolting the cab back together again. I want to take it out and about so people can see it before the major work begins, it must at least look complete. I also need a new bumper and the front number plate. Then I will fix the holes in the bulkhead and then all that remains is fitting the new chassis.

What will be the hardest part?

Finding the correct cherry picker will not be easy or cheap. With projects such as these one needs to find the right balance between preservation and replacement. This will take some careful thought.

When will it be finished?

A couple of years yet, I would think.

Who is helping you with the project?

My friend Rob from Land Rover Optional Equipment has provided some parts and advice and I've managed to source some bits from Dunsfold. My girlfriend also mucks in.

Any other projects on the go?

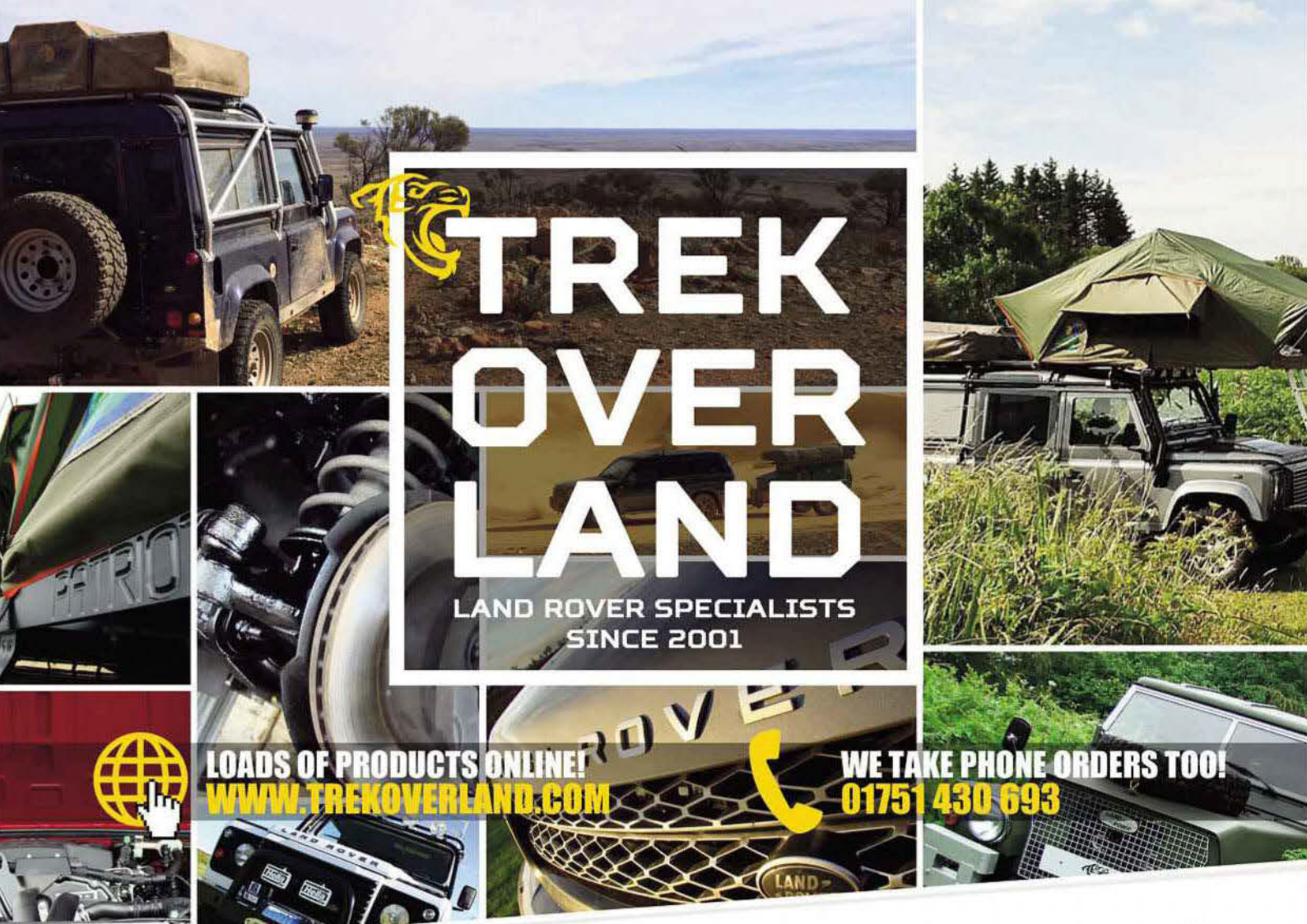
I have another 1973 1-Ton in bits at a mate's workshop. He is also rebuilding our 1966 SWB for my girlfriend to use. I also have a roadworthy SIIA 1-Ton and a Defender as my daily driver.

What others you have owned?

My first car was a 1973 Series III SWB.

Anything else?

I would love to hear from anyone who knows anything about these vehicles. I also need information about the Spencer cherry picker with hydraulic jacklegs that would have been fitted. I can be contacted via www.onetonlandrover.co.uk



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